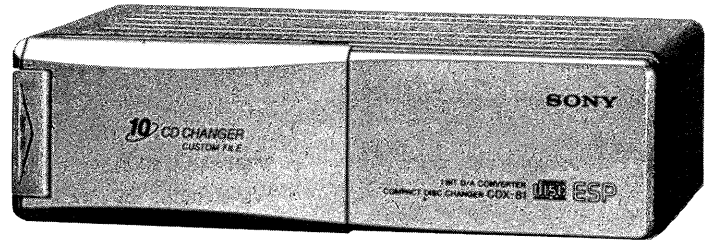
CDX-81

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model



Model Name Using Similar Mechanism	CDX-91
CD Drive Mechanism Type	MG-110A-132 MG-110B-132
Optical Pick-Up Name	KSS-400A

SPECIFICATIONS

System	Compact disc digital audio system
Frequency response	5 – 20,000 Hz
Wow and flutter	Below measurable limit
Signal-to-noise ratio	100 dB
Outputs	BUS control output (8 PIN) Analog audio output (RCA PIN)
Current drain	800 mA (CD playback) 800 mA (during loading or ejecting a disc)
Operating temperature	–10°C to 55°C
Dimensions	Approx. 305 × 90 × 180 mm (w/h/d) not incl. projecting parts and controls
Mass	Approx. 2.2 kg
Power requirement	12 V DC car battery (negative ground)
Supplied accessories	Disc magazine (1) Mounting hardware (1 set) BUS cable (1) RCA pin cord (1)

Design and specifications subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents

COMPACT DISC CHANGER

SONY®

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Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

Laser Diode Properites
- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output Power: less than 44.6 μW*

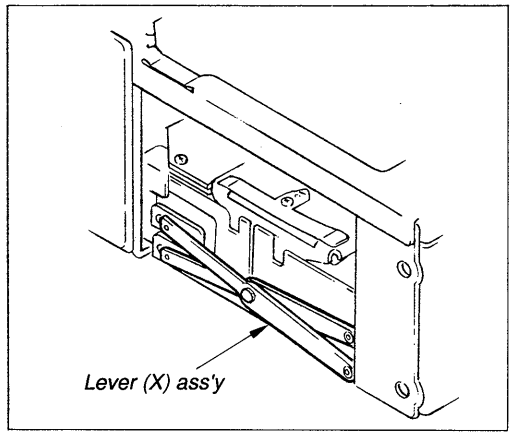
  * This output is the value measured at a distance of 200mm from the objective lens surface on the Optical Pick-up Block.

CAUTION

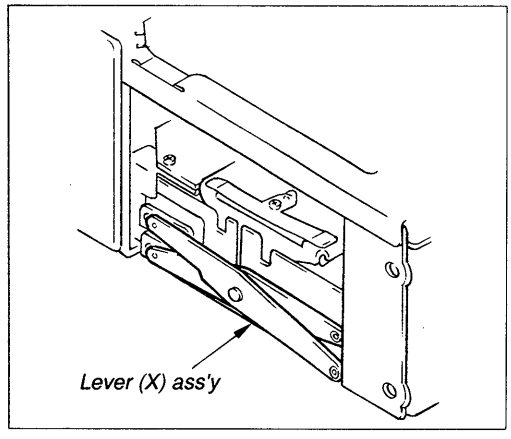
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

• Mechanism Deck Type Discrimination

MG-110A-132



MG-110B-132



SECTION 1

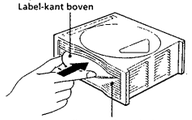
GENERAL

This section is extracted from instruction manual.

Preparations/Préparatifs/Vorbereitungen/Preparativi/Voorbereidingen

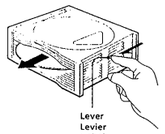
1

Labeled surface
Surface Imprimée
Beschriftete Seite
Superficie con l'etichetta
Label-kant boven



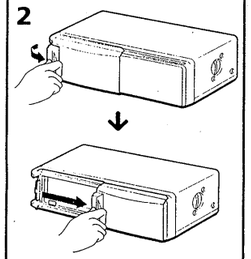
10 discs, one in each slot
10 disques, un par fente
Insgesamt 10 CDs
(eine in jedem Fach)
10 dischi, uno in ciascun comparto
Tien discs, in elke gleuf één

To remove
Retrait
Herausnehmen der CD
Per estrarre
Verwijderen



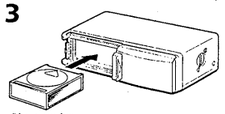
Lever
Levier
Hebel
Leva
Hendeltje

2



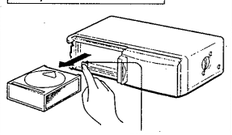
To open the door, first release the catch by turning it into the direction shown.
Pour ouvrir la porte, débloquez d'abord le loquet en le tournant dans le sens indiqué.
Zum Öffnen der Klappe lösen Sie zunächst die Arretierung, indem Sie sie drehen (siehe Abbildung).
Om het luikje te openen moet u het eerst ontgrendelen door het in de aangeduide richting te draaien.
Per aprire la porta, rilasciare dapprima il fermo girandolo nella direzione illustrata.

3



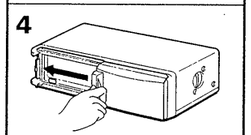
Disc magazine
Chargeur de disques
CD-Magazin
Contenitore dischi
Disc-magazijn

To remove
Retrait
Herausnehmen des CD-Magazins
Per estrarre
Verwijderen



EJECT

4



If the disc magazine does not lock properly.
Take out the magazine, and after pressing the EJECT button, reinsert it.

Use the unit with the door closed
Otherwise, foreign matter may enter the unit, and contaminate the lenses inside the changer.

Notes
- To listen to an 8 cm CD, use the separately sold Sony CD, adapter CSA-8. Be sure to always use the specified adapter, as failing to do so may cause a malfunction of the unit. If you use any other adapter, the unit may not operate properly. When using the sony CD adapter, make sure that three catches on the adapter are firmly latched onto the 8 cm CD.
- When a disc magazine is inserted into the CD changer or the reset button of the connected car audio is pressed, the unit will be automatically activated and read the information of CDs. When the information of all the CDs in the disc magazine has been read, the unit will automatically stop the operation (CDX-71/72/81).

Si vous ne pouvez pas fermer le chargeur de disques.
Sortez le chargeur et, après avoir appuyé sur la touche EJECT, réinsérez-le.

Utiliser cet appareil avec la trappe fermée
Sinon, des corps étrangers pourraient pénétrer dans l'appareil et encrasser les lentilles dans le lecteur.

Remarques
- Pour écouter une disque de 8 cm, utilisez l'adaptateur Sony CSA-8, vendu séparément, à l'exclusion de tout autre, pour éviter tout problème de fonctionnement. Si vous utilisez un autre adaptateur, l'appareil risque de ne pas fonctionner correctement. Quand vous utilisez l'adapatateur CD Sony, vérifiez que les trois griffes sont bien en prise sur le CD de 8 cm.
- Quand un chargeur de disques est inséré dans le changeur de CD ou si la touche de réinitialisation de l'autoradio raccordé est enclenchée, l'appareil se met automatiquement en marche et reproduit les CD. Lorsque tous les CD du chargeur ont été reproduits, l'appareil s'arrête automatiquement (CDX-71/72/81).

Wenn sich das CD-Magazin nicht richtig verriegeln läßt.
Nehmen Sie das Magazin heraus, drücken Sie die EJECT-Taste, und setzen Sie das Magazin dann wieder ein.

Das Gerät nur mit geschlossener Klappe betreiben
Halten Sie die Klappe des Geräts stets geschlossen, damit keine Fremdkörper eindringen und die Linsen im Wechsler nicht verschmutzen können.

Hinweise
- Zum Abspielen einer 8-cm-CD wird der Sony Adapter CSA-8 (Sonderzubehör) benötigt. Verwenden Sie keinen anderen Adapter, da es sonst zu Fehlfunktionen kommen kann. Achten Sie darauf, daß die drei Klauen des Adapters richtig auf der 8-cm-CD sitzen.
- Wenn Sie ein CD-Magazin in den CD-Wechsler einsetzen oder die Reset-Taste an der angeschlossenen Audio-Anlage in Ihrem Auto drücken, schaltet sich das Gerät automatisch ein und beginnt, die Daten (Musikstücke) auf den CDs zu lesen, d. h. die Wiedergabe der CDs kann beginnen. Danach stoppt das Gerät automatisch (CDX-71/72/81).

Se il contenitore dischi non si blocca in posizione correttamente.
Estrarlo e, dopo aver premuto il tasto EJECT, reinserirlo.

Usare l'apparecchio con lo sportello chiuso
Altrimenti oggetti estranei possono penetrare nell'apparecchio e contaminare le lenti all'interno del cambiatore.

Nota
- Per riprodurre compact disc da 8 cm, usare l'adattatore Sony CSA-8 in vendita separatamente. Assicurarsi di impiegare sempre l'adattatore specificato, altrimenti potrebbero verificarsi malfunzionamenti dell'apparecchio. Se si usa un altro adattatore, l'apparecchio può non funzionare correttamente. Quando si usa l'adattatore Sony, assicurarsi che i tre fermi dell'adattatore si aggancino saldamente al compact disc da 8 cm.
- Quando un contenitore dischi è inserito nel cambiatore CD o viene premuto il pulsante di azzeramento dell'autostereo collegato, l'apparecchio si accende automaticamente e legge le informazioni dei dischi. Quando le informazioni di tutti i dischi inseriti nel contenitore dischi sono state lette, l'apparecchio si ferma automaticamente (CDX-71/72/81).

Als het discmagazijn niet soepel op zijn plaats vastklikt.
Verwijder het discmagazijn, druk op de EJECT toets en breng vervolgens het discmagazijn opnieuw in.

Gebruik de compact disc wisselaar uitsluitend wanneer het deurtje gesloten is
Anders zou er stof of vuil in het apparaat terecht kunnen komen, met als gevolg vervuilde lenzen en storingen in de werking.

Opmerking
- Voor het afspelen van een 8 cm CD-single heeft u de Sony adapter CSA-8 (los verkrijgbaar) nodig. Gebruik uitsluitend het voorgeschreven type adapter, aangezien anders storingen in de werking van het apparaat kunnen ontstaan. Bij gebruik van een ander type adapter kan het apparaat niet naar behoren funktioneren. Zorg bij gebruik van de CSA-8 adapter dat de drie palletjes hiervan het CD-singletje goed vasklemmen.
- Wanneer een discmagazijn in de compact disc wisselaar wordt geplaatst of de terugstelltoets van de uitleesvenster-eenheid wordt ingedrukt, zal het apparaat automatisch ingeschakeld worden, waarna de informatie van de compact discs gelezen wordt. Nadat alle informatie gelezen is, zal het apparaat weer automatisch in de stopstand komen te staan (CDX-71/72/81).

Installation/Installation/Installation/Installazione/Installeren

Precautions

- Choose the mounting location carefully, observing the following:
  — The fuel tank should not be damaged by the tapping screws.
  — There should be no wire harnesses or pipelines under the place where you are going to install the unit.
  — The spare tire, tools or other equipment in or under the trunk should not be interfered with or damaged by the screws or the unit itself.
- Be sure to use only the supplied mounting hardware for a safe and secure installation.

Précautions

- Chisir l'emplacement de montage en tenant compte des observations suivantes:
  — Vérifier que le réservoir d'essence ne risque pas d'être endommagé par les vis taraudeuses.
  — Il ne doit pas y avoir de faisceau de fils ou de tuyaux à l'emplacement du montage.
  — Vérifier que l'appareil ou les vis ne risquent pas d'endommager ou de gêner la roue de secours, les outils, ou tout autre objet dans le coffre.
- Pour garantir la sécurité de l'installation, utiliser uniquement le matériel de montage fourni.

Zur besonderen Beachtung

- Bei der Wahl des Einbauortes ist folgendes zu beachten:
  — Der Tank darf durch die Blechschrauben nicht beschädigt werden.
  — Unter der Fläche, auf die das Gerät montiert werden soll, dürfen sich keine Drähte oder Rohrleitungen befinden.
  — Ersatzreifen, Werkzeug usw. im oder unter dem Kofferraum dürfen durch die Blechschrauben nicht beschädigt werden. Achten Sie auch darauf, daß die Herausnahme des Ersatzreifens, Werkzeugs usw. nicht durch das Gerät behindert wird.
- Für sicheren und stabilen Einbau verwenden Sie ausschließlich die mitgelieferten Befestigungsteile.

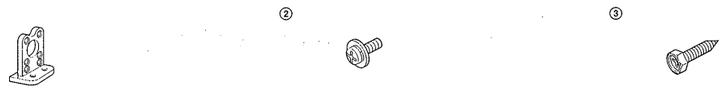
Precauzioni

- Scegliere con cura il luogo di installazione, osservando quanto segue:
  — Il serbatoio del carburante non deve essere danneggiato dalle viti filettanti.
  — Non devono essere presenti né cavi né tubi sotto il luogo scelto per l'installazione dell'apparecchio.
  — Le viti e l'apparecchio stesso non devono interferire con, o danneggiare, la ruota di scorta, gli attrezzi o altri dispositivi presenti dentro o sotto il bagagliaio.
- Assicurarsi di usare solo il materiale di montaggio in dotazione per un'installazione stabile e sicura.

Voorzorgsmaatregelen

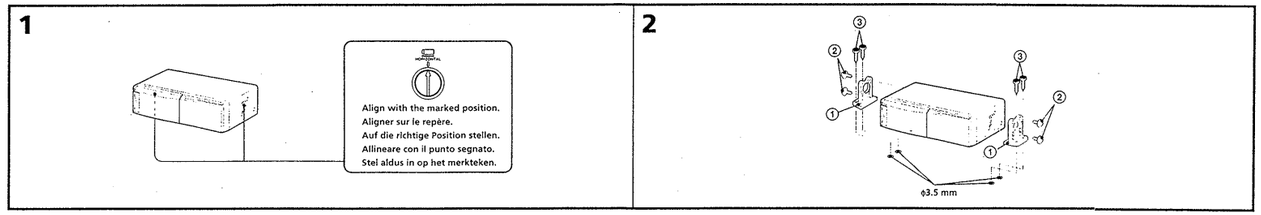
- Kies de plaats van opstelling met zorg, daarbij de volgende punten in het oog houdend:
  — Let op dat de plaatschroeven de benzinetank niet beschadigen.
  — Kontroleer of onder de plaats waar u het apparaat wilt monteren geen bedrading of leidingen lopen.
  — Houd bij het monteren rekening met het reserwiel, gereedschappen en eventueel in de kofferruimte aanwezige andere apparaten, zodat deze de compact disc wisselaar niet in de weg zitten, noch beschadigd kunnen worden door de montageschroeven van de laatste.
- In het belang van een veilige en stevige montage dient u uitsluitend het bijgeleverde montagemateriaal te gebruiken.

Supplied Mounting Hardware / Matériel de montage fourni / Mitgelieferte Befestigungsteile / Materiale di montaggio in dotazione / Bijgeleverd montagemateriaal

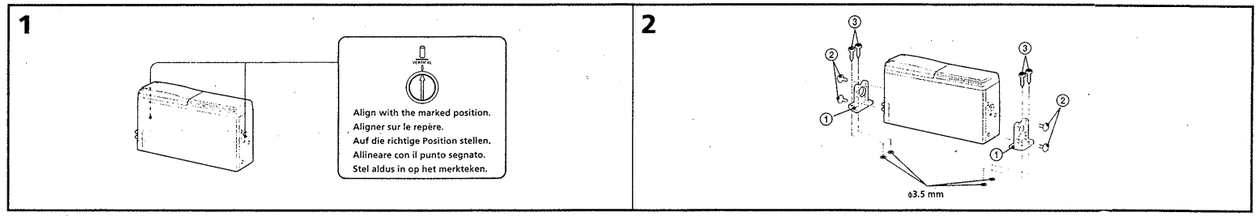


How to Install the Unit/Installation de l'appareil/Installation des Gerätes/Installazione dell'apparecchio/Installatie van het apparaat

Horizontal installation/Installation horizontale/Horizontaler Einbau/Installazione in orizzontale/Horizontaal installeren



Vertical installation/Installation verticale/Vertikaler Einbau/Installazione in verticale/Vertikaal installeren



Suspended installation

When the unit is to be installed under the rear tray etc. in the trunk room, make sure that the following provisions are made.
- Choose the mounting location carefully so that the unit can be installed horizontally.
- Make sure that the unit does not hinder the movement of torsion bar spring etc. of the trunk lid.

Installation suspendue

Si l'appareil doit être installé sous la plage arrière dans le coffre par exemple, observer les précautions suivantes.
- Bien choisir l'emplacement pour pouvoir installer l'appareil à l'horizontale.
- Vérifier que l'appareil ne gêne pas les mouvements du ressort de fermeture du coffre, entre autres.

Hängender Einbau

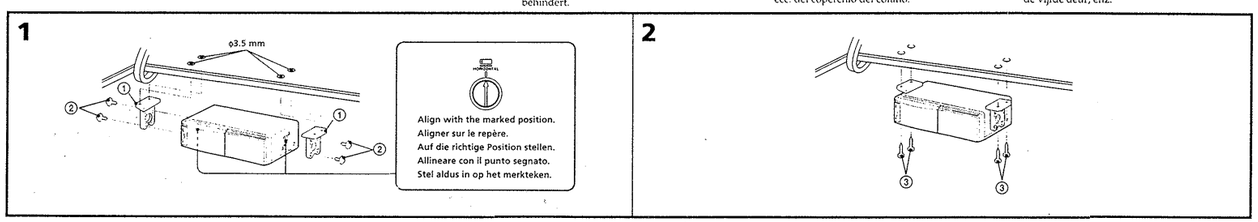
Bei hängender Installation unter der Heckablage usw. im Kofferraum beachten Sie folgende Vorsichtsmaßnahmen:
- Wählen Sie den Befestigungsort sorgfältig so aus, daß die Einheit horizontal montiert werden kann.
- Achten Sie darauf, daß das Gerät die Federn, den Arm usw. des Kofferraumdeckels nicht behindert.

Installazione in sospensione

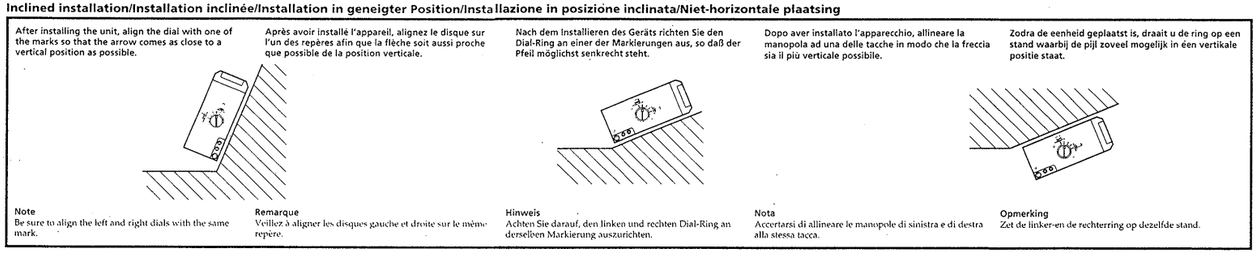
Se l'apparecchio deve essere installato sotto il ripiano posteriore, nel bagagliaio, ecc., assicurarsi di prendere le seguenti precauzioni:
- Scegliere con attenzione il luogo di montaggio in modo che l'apparecchio possa essere installato orizzontalmente.
- Assicurarsi che l'apparecchio non ostacoli il movimento della molla della barra di torsione ecc. del coperchio del cofano.

Hangend installeren

Als u het apparaat onder de hoedenplank of iets dergelijks wilt installeren, let dan op de volgende punten:
- Kies een geschikte plek waar u het apparaat horizontaal kunt ophangen.
- Vergewis u ervan dat het apparaat niet beschadigd kan worden door bewegende onderdelen zoals een kofferdeksel, de veren van de vijfde deur, enz.



Inclined installation/Installation inclinée/Installation in geneigter Position/Installazione in posizione inclinata/Niet-horizontale plaatsing



After installing the unit, align the dial with one of the marks so that the arrow comes as close to a vertical position as possible.

Note
Be sure to align the left and right dials with the same mark.

Après avoir installé l'appareil, alignez le disque sur l'un des repères afin que la flèche soit aussi proche que possible de la position verticale.

Remarque
Veillez à aligner les disques gauche et droite sur le même repère.

Nach dem Installieren des Geräts richten Sie den Dial-Ring an einer der Markierungen aus, so daß der Pfeil möglichst senkrecht steht.

Hinweis
Achten Sie darauf, den linken und rechten Dial-Ring an derselben Markierung auszurichten.

Dopo aver installato l'apparecchio, allineare la manopola ad una delle tacche in modo che la freccia sia il più verticale possibile.

Nota
Accertarsi di allineare le manopole di sinistra e di destra alla stessa tacca.

Zodra de eenheid geplaatst is, draait u de ring op een stand waarbij de pijl zoveel mogelijk in één vertikale positie staat.

Opmerking
Zet de linker-en de rechterring op dezelfde stand.

Connections / Connexions / Anschluß / Collegamenti / Aansluitingen

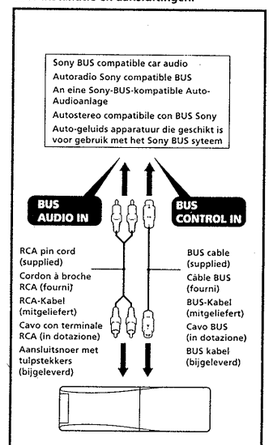
For details, refer to the Installation/Connections manual of the car audio.

Pour plus de détails, consulter le manuel d'installation/connexions de l'autoradio.

Einzelheiten entnehmen Sie der Installations-/Anschlußanleitung Auto-Audioanlage.

Per i dettagli, fare riferimento al manuale di installazione/collegamenti dell'autostereo.

Zie voor nadere bijzonderheden over het aansluiten van andere apparatuur, de bij de auto-stereo geleverde gebruiksaanwijzing voor installatie en aansluitingen.


Sony BUS compatible car audio
Autoradio Sony compatible BUS
An eine Sony-BUS-kompatible Auto-Audioanlage
Autostereo compatibile con BUS Sony
Auto-geluids apparatuur die geschikt is voor gebruik met het Sony BUS syteem
BUS AUDIO IN
BUS CONTROL IN
RCA pin cord (supplied)
Cordon à broche RCA (fourni)
RCA-Kabel (mitgeliefert)
Cavo con terminale RCA (in dotazione)
Aansluitsnoer met tulpstekkers (bijgeleverd)
BUS cable (supplied)
Câble BUS (fourni)
BUS-Kabel (mitgeliefert)
Cavo BUS (in dotazione)
BUS kabel (bijgeleverd)

Note
Because CDX-51/52 does not have the custom file function, even if it is connected to a master unit with the custom file function, the function will not be available. But if multiple changers are connected, and one of them has the custom file function, this unit will also be able to use the function.

Remarque
Étant donné que le CDX-51/52 n'a pas de fonction de fichier personnalisé, même si vous le raccordez à un appareil principal equipé de la fonction de fichier personnalisé, vous ne pourrez pas utiliser la fonction. Cependant si vous avez raccordé plusieurs changeurs et que l'un deux est équipé de la fonction de fichier personnalisé, l'appareil pourra aussi l'utiliser.

Hinweis
Da der CDX-51/52 keine Custom File-Funktion besitzt, steht Ihnen diese Funktion auch dann nicht zur Verfügung, wenn Sie dieses Gerät an ein Hauptgerät mit Custom File-Funktion anschließen.
Werden allerdings mehrere Wechsler angeschlossen und verfügt einer der Wechsler über die Custom File-Funktion, so können Sie die Custom File-Funktion nutzen.

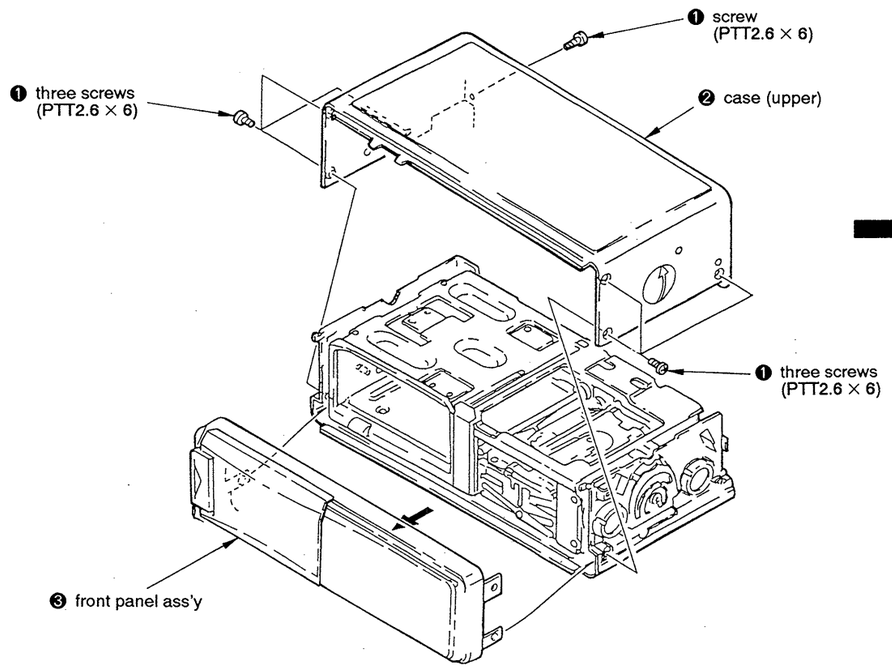
Nota
Poiché il CDX-51/52 non possiede la funzione di schedario personale, anche se è collegato ad un apparecchio principale dotato di funzione di schedario personale, questa funzione non sarà attivabile.
Tuttavia, se sono collegati più cambiatori e uno di essi possiede la funzione di schedario personale, questo apparecchio sarà in grado di usare tale funzione.

Opmerking
Aangezien de CDX-51/52 zelf niet is voorzien van de gebruikers-geheugenfunkties, zullen ook bij aansluiten op een daarvoor geschikte bedieningseenheid deze funkties niet beschikbaar zijn. Als er echter verscheidene compact disc wisselaars zijn aangesloten, waarvan er een geschikt is voor de gebruikers-geheugenfunkties, dan zijn deze funkties ook voor dit apparaat te gebruiken.

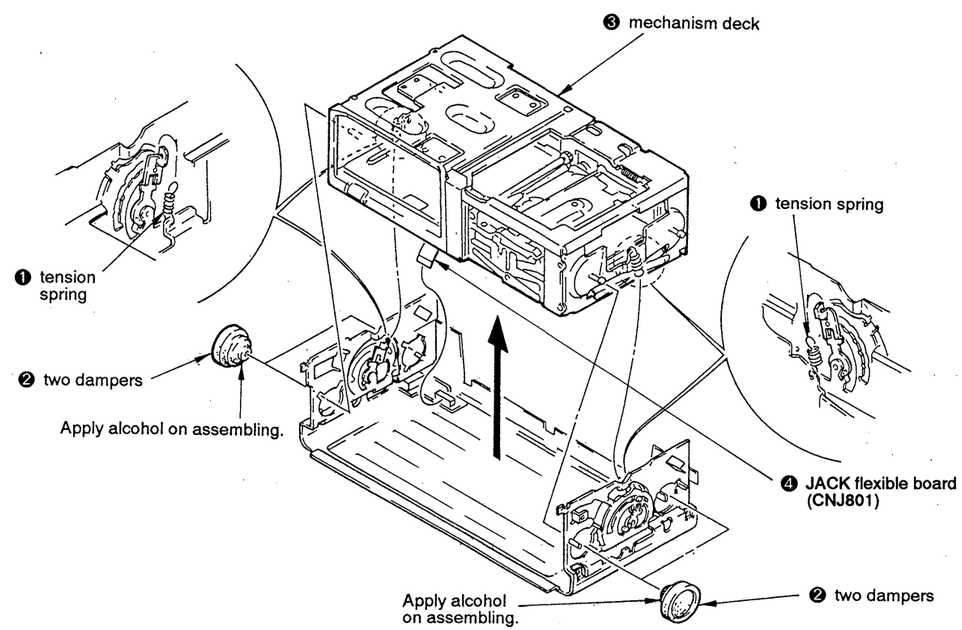
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

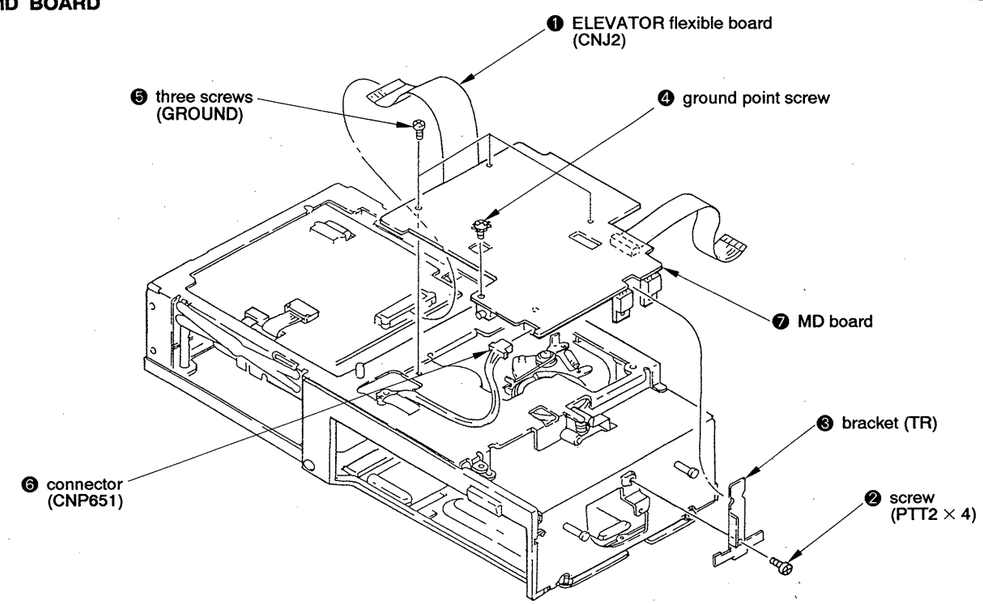
CASE (UPPER) AND FRONT PANEL ASS'Y



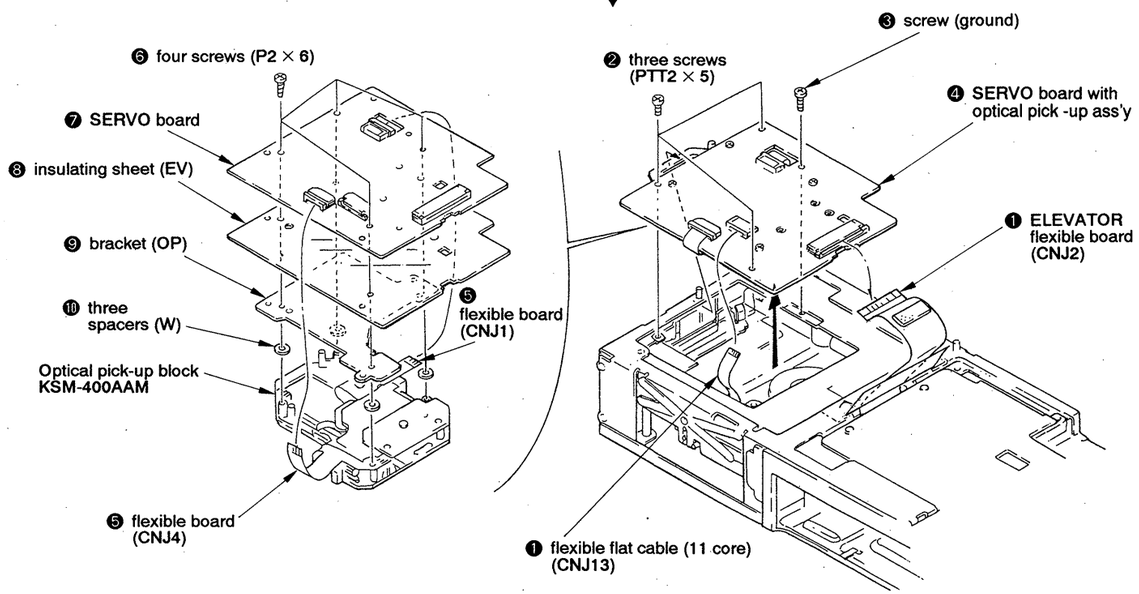
MECHANISM DECK



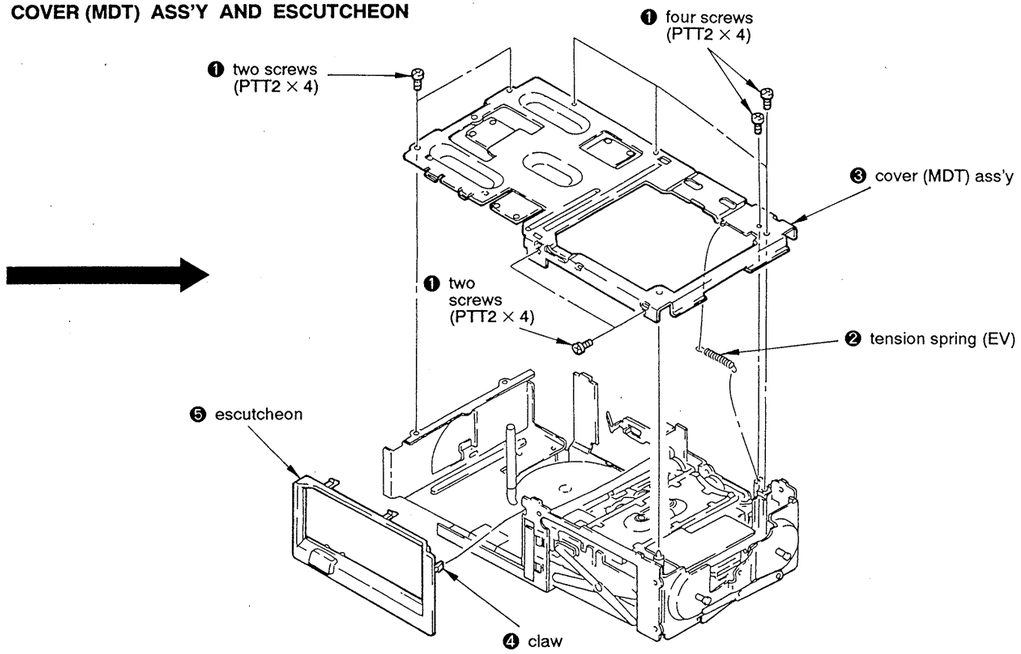
MD BOARD



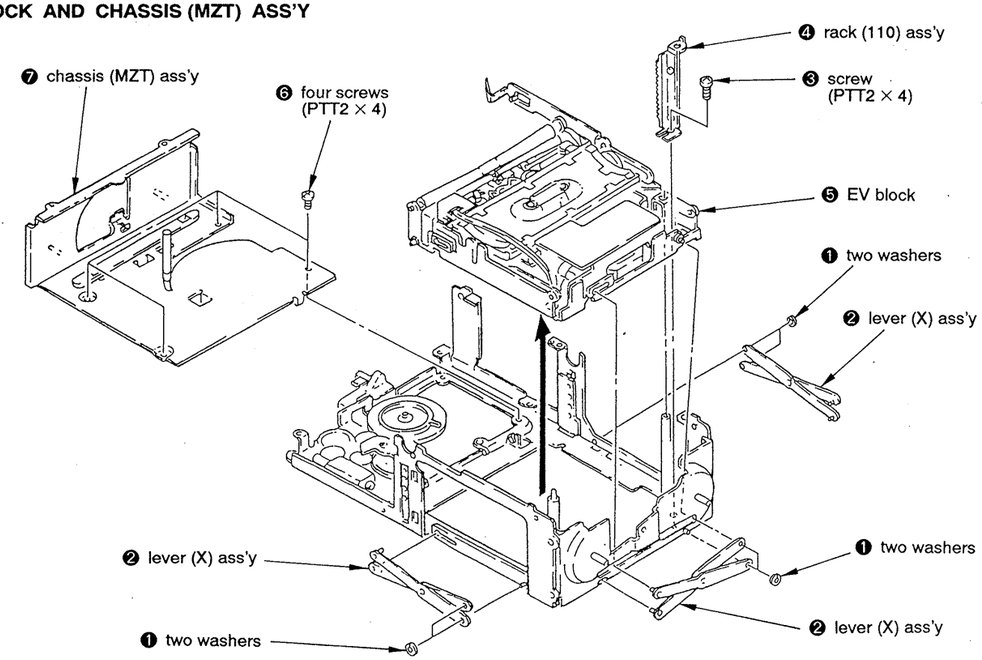
SERVO BOARD AND OPTICAL PICK-UP BLOCK


❻ four screws (P2 × 6)
❼ SERVO board
❽ insulating sheet (EV)
❾ bracket (OP)
❿ three spacers (W)
Optical pick-up block KSM-400AAM
❺ flexible board (CNJ4)
❺ flexible board (CNJ1)
❷ three screws (PTT2 × 5)
❸ screw (ground)
❹ SERVO board with optical pick -up ass'y
❶ ELEVATOR flexible board (CNJ2)
❶ flexible flat cable (11 core) (CNJ13)

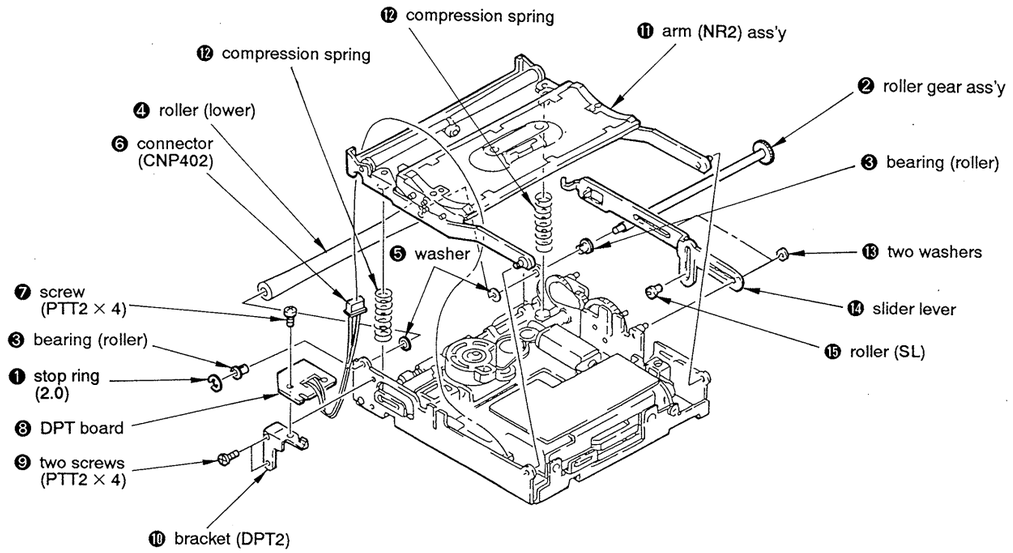
COVER (MDT) ASS'Y AND ESCUTCHEON



EV BLOCK AND CHASSIS (MZT) ASS'Y



ROLLER (LOWER), DPT BOARD AND ARM (NR2) ASS'Y



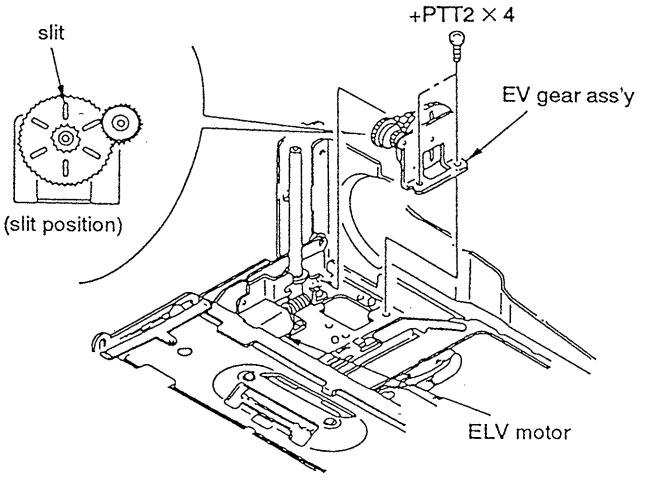
SECTION 3
MECHANICAL ADJUSTMENT

Elevator Height Adjustment

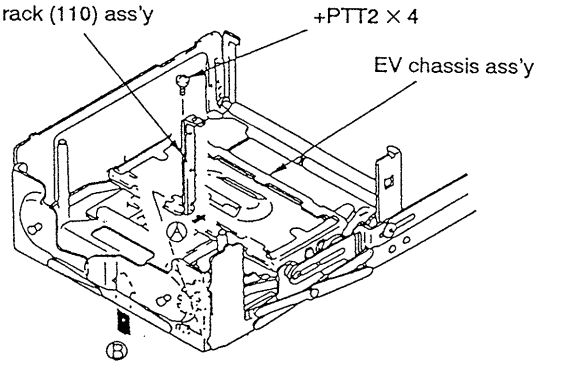
This adjustment should be done when replacing the rack assembly on the parts related to it.

Procedure:

1. Fit the EV gear assembly after adjusting its slit position as shown in the figure. (When the slit position is out of order after fitting, it can be adjusted finely by turning the worm gear of the ELV motor.)



2. Fit the rack assembly putting it in the arrow Ⓐ direction. At this time insert a spacer (approx. 1 mm thickness) or fit the rack assembly while pushing the EV chassis assembly in the arrow Ⓑ direction.



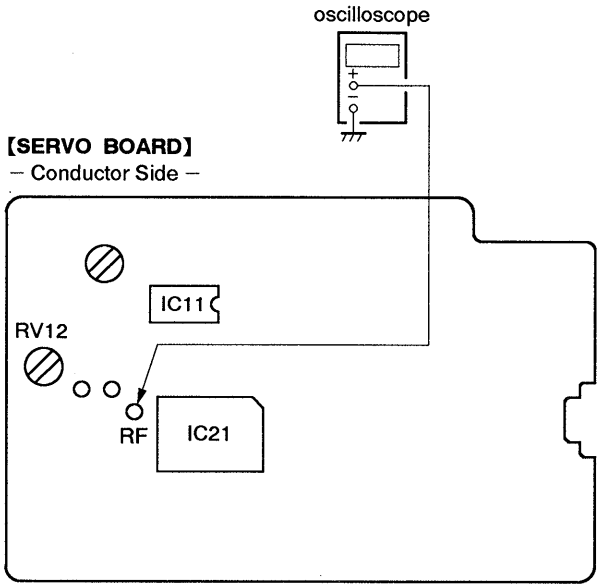
Note: When this adjustment is out of order, it doesn't operate normally and the roaring of the motor can be heard. In this case adjust again.

SECTION 4
ELECTRICAL ADJUSTMENTS

1. Perform adjustments as given.
2. Be sure to use the disc "YEDS-18" parts code : 3-702-101-01, but only when indicated.
3. Power supply voltage : DC 14.4 V (more than 3A).

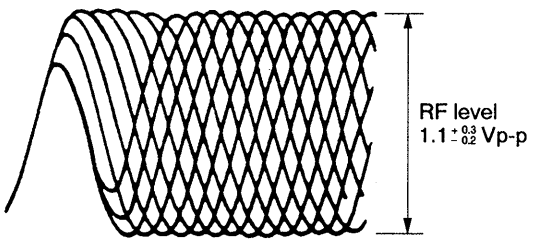
Focus Offset Adjustment

Procedure:



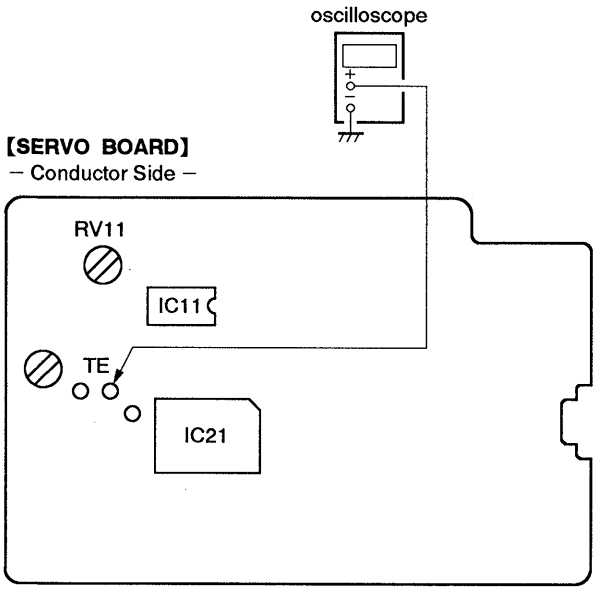
1. Connect the oscilloscope to SERVO board test point RF, pin ㉖ of IC21.
2. Put the set into play mode by loading the disc.
3. Adjust (SERVO board) RV12 so that waveform on the oscilloscope (eye pattern) is good.
   (A good eye pattern means that the diamond shape (◇) in the center of the oscilloscope can be clearly distinguished.)

Volt/Div: 200 mV
Time/Div: 0.5 μsec



Tracking Offset Adjustment

Procedure:



1. Connect the oscilloscope to SERVO board test point TE, pin ⑭ of IC11.
2. Put the set into play mode by loading the disc.
3. Press the ⏮ or ⏭ button, then, check the traverse waveform.*
4. Adjust RV11 (SERVO board) so that the oscilloscope reading is symmetrical in relation to 0 V.

*Traverse waveform : This is the tracking error waveform appears when crossing the track.

Volt/Div: 0.5 V
Time/Div: 2 msec
Center 0 V

traverse waveform
(100 track jump waveform)

SECTION 5
DIAGRAMS

5-1. IC PIN FUNCTION DESCRIPTION

IC31 CXP84332-020Q (SYSTEM CONTROLLER) (SERVO BOARD)

Pin No.	Pin Name	I/O	Function
1	HOME	I	HOME sensor input
2		—	Not used
3		—	Not used
4	CES	I	Chucking end detect sensor input
5	DBL	I	High speed mode selection signal input. "H": High speed
6	MC	O	Motor control (M501, M502)
7	MB	O	Motor control (M501, M502)
8	MA	O	Motor control (M501, M502)
9	PGR	O	Plunger control
10	M3	O	Eject motor control
11	$\overline{M3}$	O	Eject motor control
12	ELVON	O	Elevator up/down, sensor power control
13	CDRST	O	Servo system reset . "L" : reset
14	CDON	O	Servo system power on/off. "H": On
15	APC	O	Laser on/off control. "L": Laser on.
16	A-MUTE	O	Audio output mute
17	EMPH	O	Emphasis control
18	DPT	I	Disc movement detect sensor input
19	DOE	I	Disc Pick-up position detect sensor input. Disc is above pick-up : "L"
20	PST	I	Magazine set detect sensor input
21	LOT	I	level open detect sensor input
22	XWRE	O	DRAM write enable signal
23	XRDE	O	DRAM read enable signal
24	XQOK	O	Snb code Q OK output
25	GRSRST	O	"H" output on track jump
26	ESPXLT	O	Serial data latch signal
27	XSOE	O	Serial data control
28	SDTI	O	CXD2515Q control signal output
29	$\overline{PGM}$	I	Program play select. "H": Program play cannot be used.
30	$\overline{RESET}$	I	System reset. "L": reset
31	XLTI	I	System clock input
32	XLTO	O	System clock output
33	VSS	—	GND
34		—	Not used
35		—	Not used
36	AVSS	—	A/D converter GND
37	AV REF	I	A/D converter refrence voltage input.
38	TEMP.H	I	High temperature detection (For servo gain correction)
39	TEMP.L	—	Not used
40		—	Not used
41		—	Not used
42		—	Not used
43		—	Not used

Pin No.	Pin Name	I/O	Function
44		—	Not used
45	INIT	I	Analog digital output. Set E^2PROM is used on not (GND)
46	GRSCOR	I	Sub code sync detecting signal of X'tal precision adsorbs from jitter margin.
47	REQ	—	Not used
48	SCK	I	Serial clock input
49	SI	I	Serial data input
50	SO	O	Serial data output
51	SQCK	O	Clock for SUBQ read output
52	SUBQ	I	SUBQ data input
53		—	Not used
54	BUSON	I	"L" during controller communicating
55	D/A SELECT	I	Digital/Analog selection. "L": Analog
56	SCOR	I	Sub-code sync detecting signal input
57		—	Not used (Power supply)
58		—	Not used
59		—	Not used
60	B.U.CHECK	I	back up detection input. "H" : back up on
61	WUP	I	External timer/counter input
62	LOCK	I	During locking magazine :"H"
63	EHS	I	Elevator location detection
64	EEDATA	I/O	External 16 bits timer/counter input/output
65	EECLK	O	14 bits pulse width modulation output
66	EEINIT	I	EEPROM initializing input. "H": Format (GND)
67	TR OFF	I	"L": Tracking off (During signal is "L" only)
68	SINGLE	I	"L": One disc playing test mode
69	FOK	I	Focus OK signal input
70	GFS	I	Guarded frame sync input
71	SENS	I	Sense signal input
72	VDD	—	Power supply
73	N.C	—	Not used (Power supply)
74	CDCLK	O	Servo system control output
75	CDXLT	O	Servo system control output
76	CDDATA	O	Servo system control output
77	SCLK	O	Clock for serial communication output
78	EJTKEY	I	Eject key input. "H" : on
79		—	Not used
80		—	Not used

IC501 (BA6247FP-Y) MOTOR DRIVER IC OPERATION (DRIVER BOARD)

The elevator motor connected between Pin ⑱ and Pin ㉒ of IC51 is as M501, and the disc loading/saving motor connected between Pin ① and Pin ⑱ of IC501 is as M502.

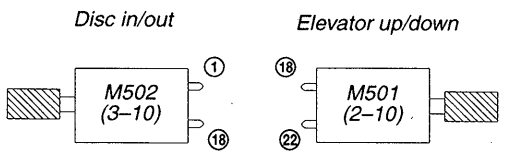
When the IC port logic is Pin ㉒ > ⑱, Pin ① > ⑱, the rotating direction of M501 and M502 becomes normal.

ROTATION TRUTH TABLE

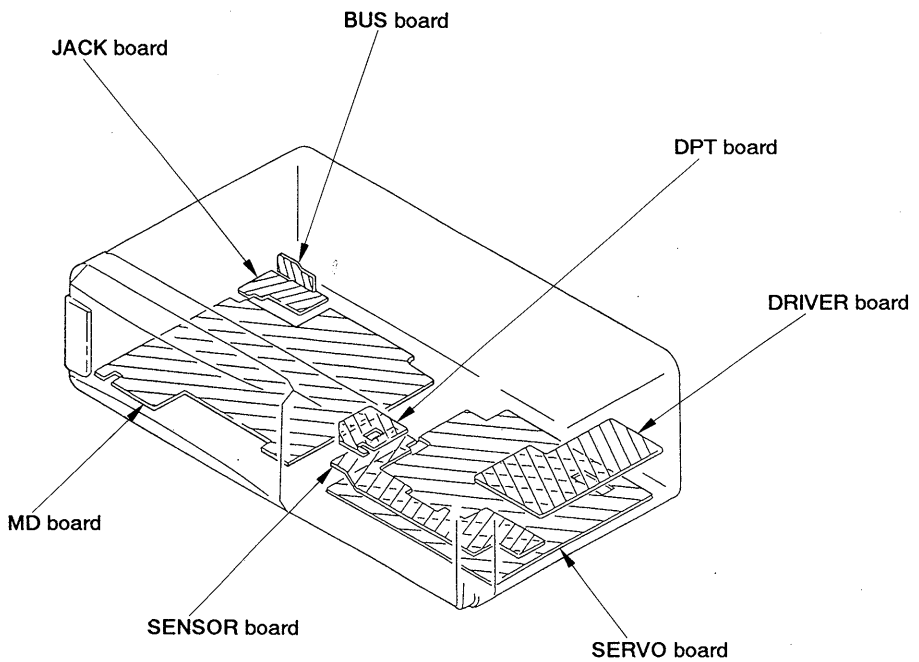
① When MB = MC, both M501 and M502 are stop. (MA value is free.)

② When MB ≠ MC:

MA Pin ⑬	MB Pin ⑭	MC Pin ⑮	M501	M502	Motor Terminal			Operation
					㉒	①	⑱	
L	L	H	Reverse	Stop	L	OPEN	H	Elevator UP
H	L	H	Normal	Stop	H	OPEN	L	Elevator DOWN
L	H	L	Stop	Reverse	OPEN	L	H	Disc load
H	H	L	Stop	Normal	OPEN	H	L	Disc save



• **Circuit Boards Location**



• **Semiconductor Location**

Ref. No.	Location
D301	B-13
D401	K-16
D451	H-21
D501	I-14
D651	E-12
D652	E-12
D653	E-11
D654	E-12
D655	E-11
D701	B-5
D901	C-16
D902	C-16
D903	D-15
D904	D-15
D905	F-15
D906	F-14
D907	F-15
IC11	D-2
IC21	E-3
IC31	C-6
IC32	B-4
IC41	E-5
IC42	E-6
IC301	D-11
IC302	B-11
IC305	D-15
IC501	I-13
IC652	G-16
IC653	F-10
IC654	F-11
IC703	F-3
IC704	G-7
IC901	C-16
IC902	D-16
Q11	D-3
Q12	G-5
Q13	F-8
Q14	E-7
Q302	A-13
Q401	K-16
Q402	K-17
Q403	K-16
Q404	J-20
Q701	C-8
Q702	B-8
Q703	F-7
Q704	F-7
Q705	B-3
Q711	F-7
Q901	C-16
Q902	B-10
Q903	F-15
Q904	E-15
Q905	D-15

Note on Printed Wiring Board:
- ○——— : parts extracted from the component side.
- ● : Through hole.
- △ : internal component.
- ▨ :Pattern of the rear side.
- ▩ :Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

【SERVO BOARD】

【MD BOARD】

【JACK FLEXIBLE BOARD】
I-642-838-[11]

【JACK BOARD】

【BUS BOARD】

【ELEVATOR FLEXIBLE BOARD】
I-655-682-[11]

— OPTICAL PICK-UP BLOCK —
KSM-400AAM

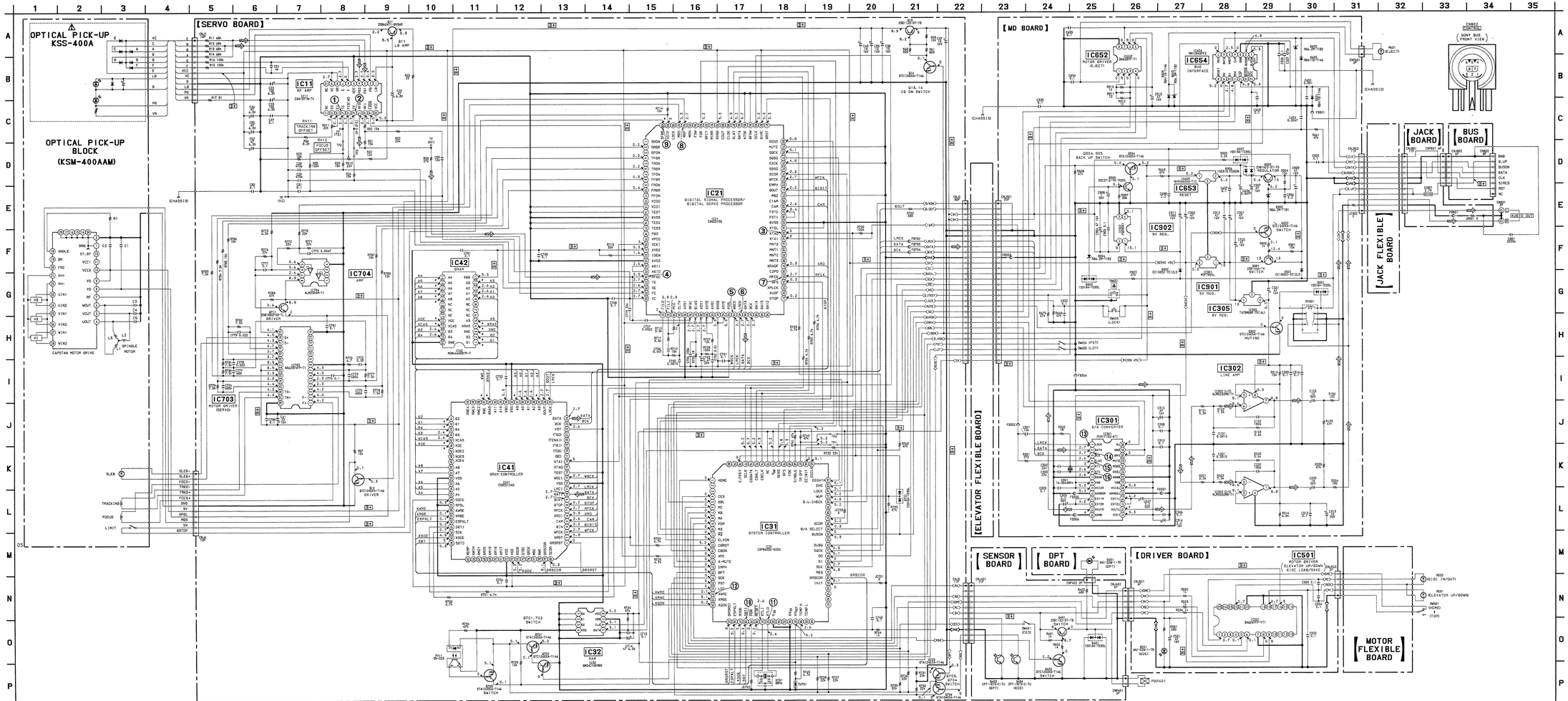
【MOTOR FLEXIBLE BOARD】

【DRIVER BOARD】

【SENSOR BOARD】

【DPT BOARD】

5-3. SCHEMATIC DIAGRAM • See page 23 for waveforms and page 25 for IC Block Diagrams



Note on Schematic Diagram:

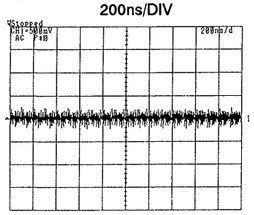
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

Note:	Note:
The components identified by mark ⚠ or otted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ! sont critiques pour la sécurité. ne les remplacer que par une pièce portant le numéro spécifié.

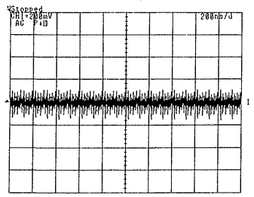
- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from CD changer controller.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  - * : Impossible to measure
- Voltages are taken with a VOM (10 MΩ/V). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ :CD

• Waveforms

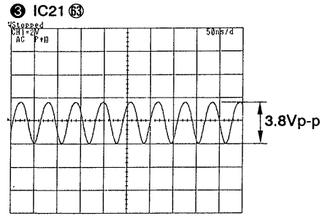
❶ IC11 ⑭ 0.5V/DIV
200ns/DIV



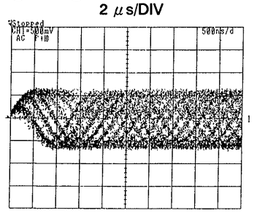
❷ IC11 ⑯ 0.2V/DIV
200ns/DIV



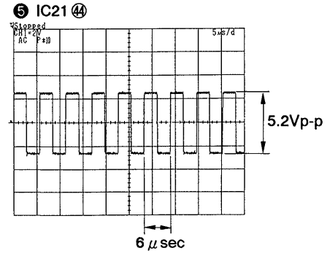
❸ IC21 ⑬



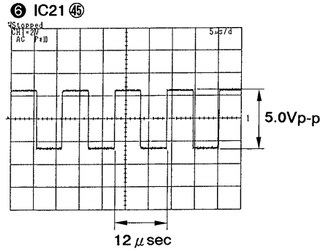
❹ IC21 ㉕ 0.5V/DIV
2 μs/DIV



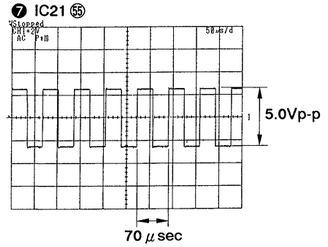
❺ IC21 ㊹



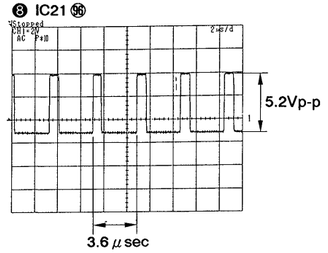
❻ IC21 ㊺



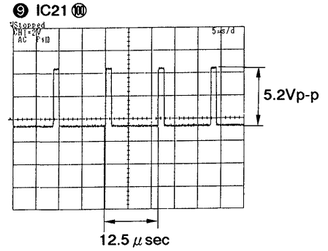
❼ IC21 ㊺



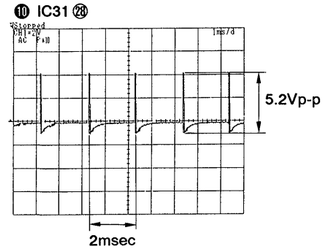
❽ IC21 ㊻



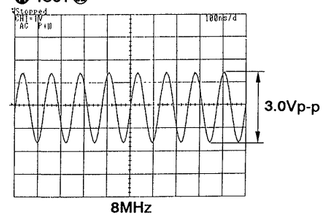
❾ IC21 ⑩



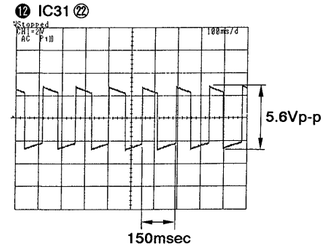
❿ IC31 ㉘



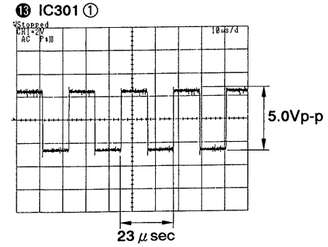
⓫ IC31 ㉜



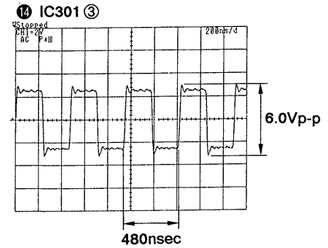
⓬ IC31 ㉒



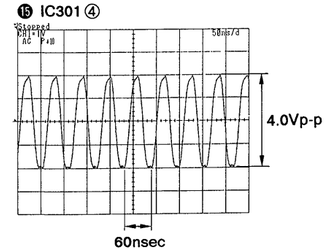
⓭ IC301 ①



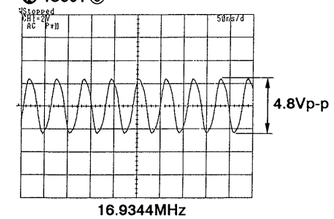
⓮ IC301 ③



⓯ IC301 ④



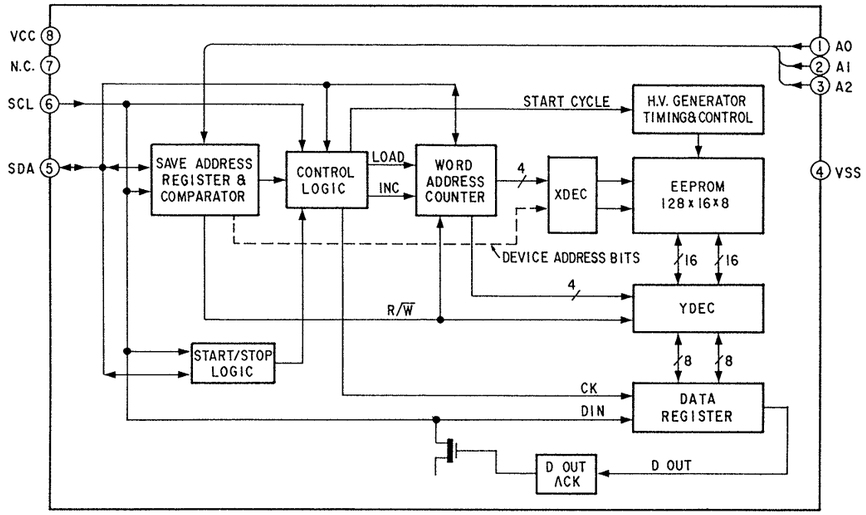
⓰ IC301 ⑥



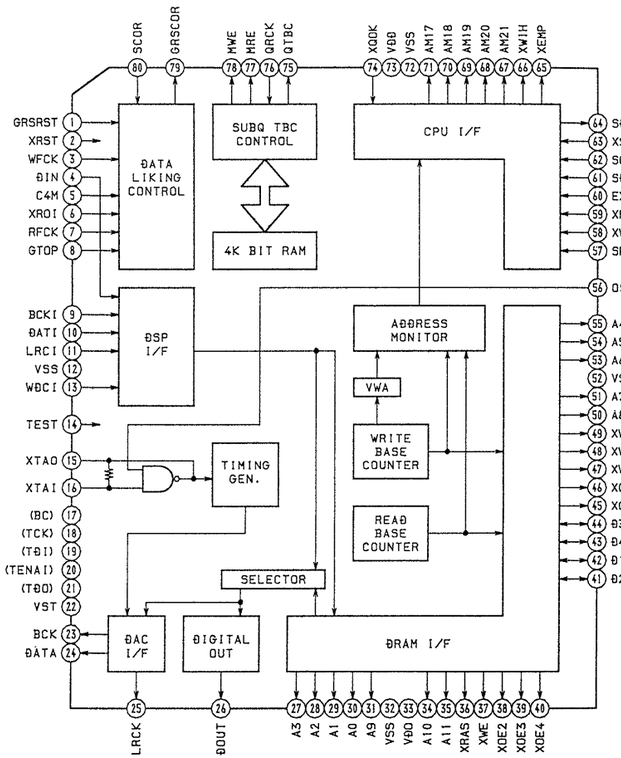
• **IC Block Diagrams**

IC11 CXA1571N-T4 (SERVO BOARD)

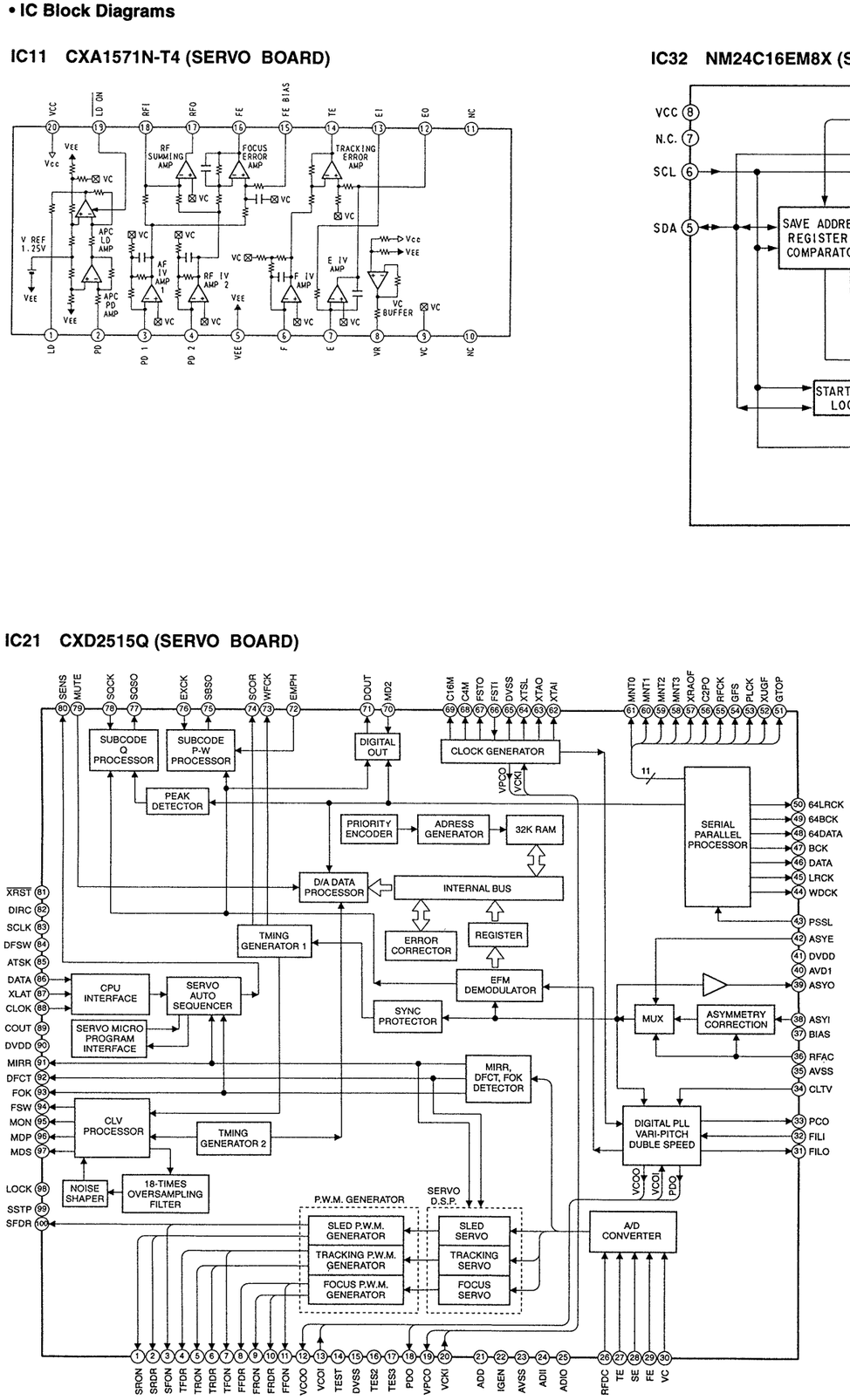
IC32 NM24C16EM8X (SERVO BOARD)



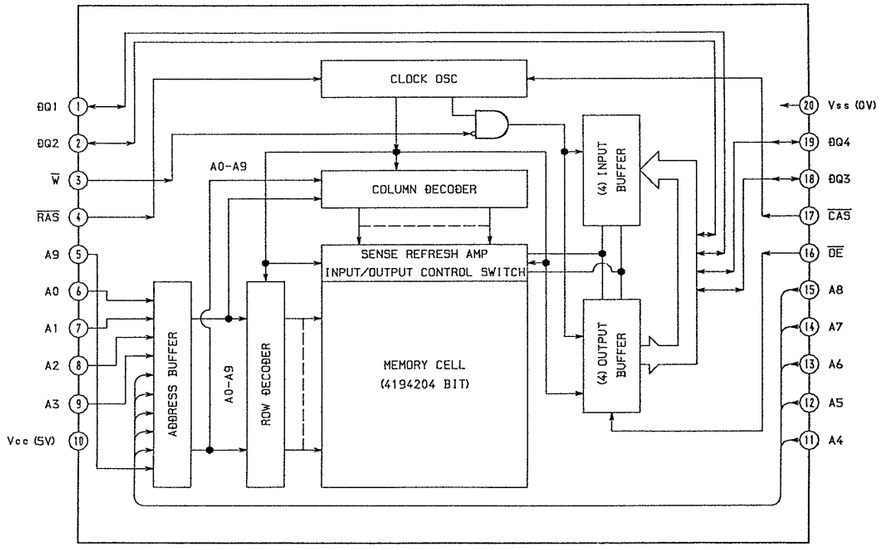
IC41 CXD2512AQ (SERVO BOARD)



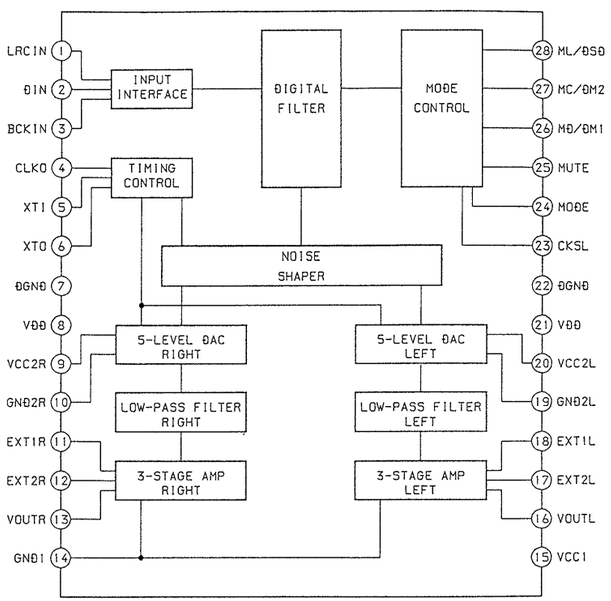
IC21 CXD2515Q (SERVO BOARD)



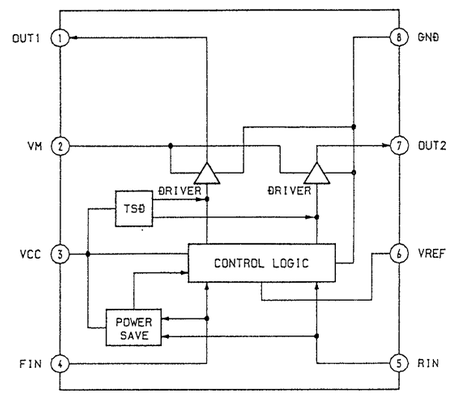
IC42 M5M44400BTP-7 (SERVO BOARD)



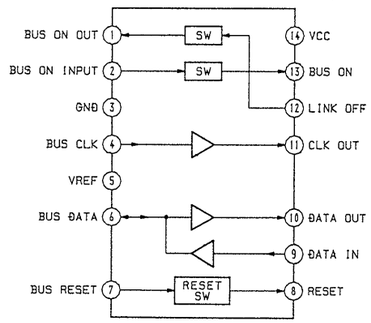
IC301 PCM1710U-AT1 (MD BOARD)



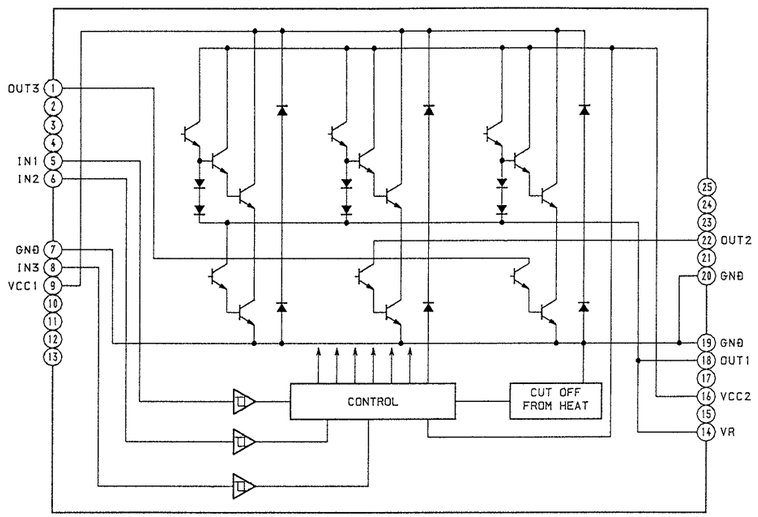
IC652 BA6287F (MD BOARD)



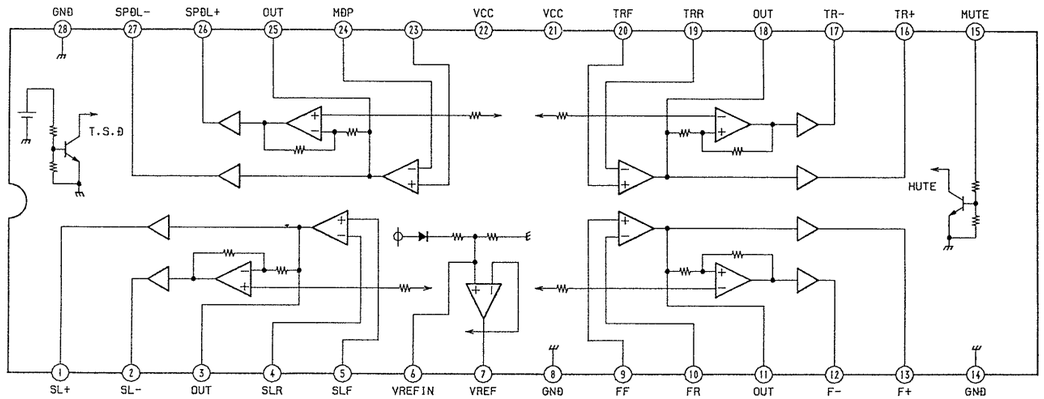
IC654 MM1284XFFE (MD BOARD)



IC501 BA6247FP-Y (DRIVER BOARD)



IC703 BA6297AFP (SERVO BOARD)



SECTION 6
EXPLODED VIEWS

SEE ADDITIONAL INFORMATION

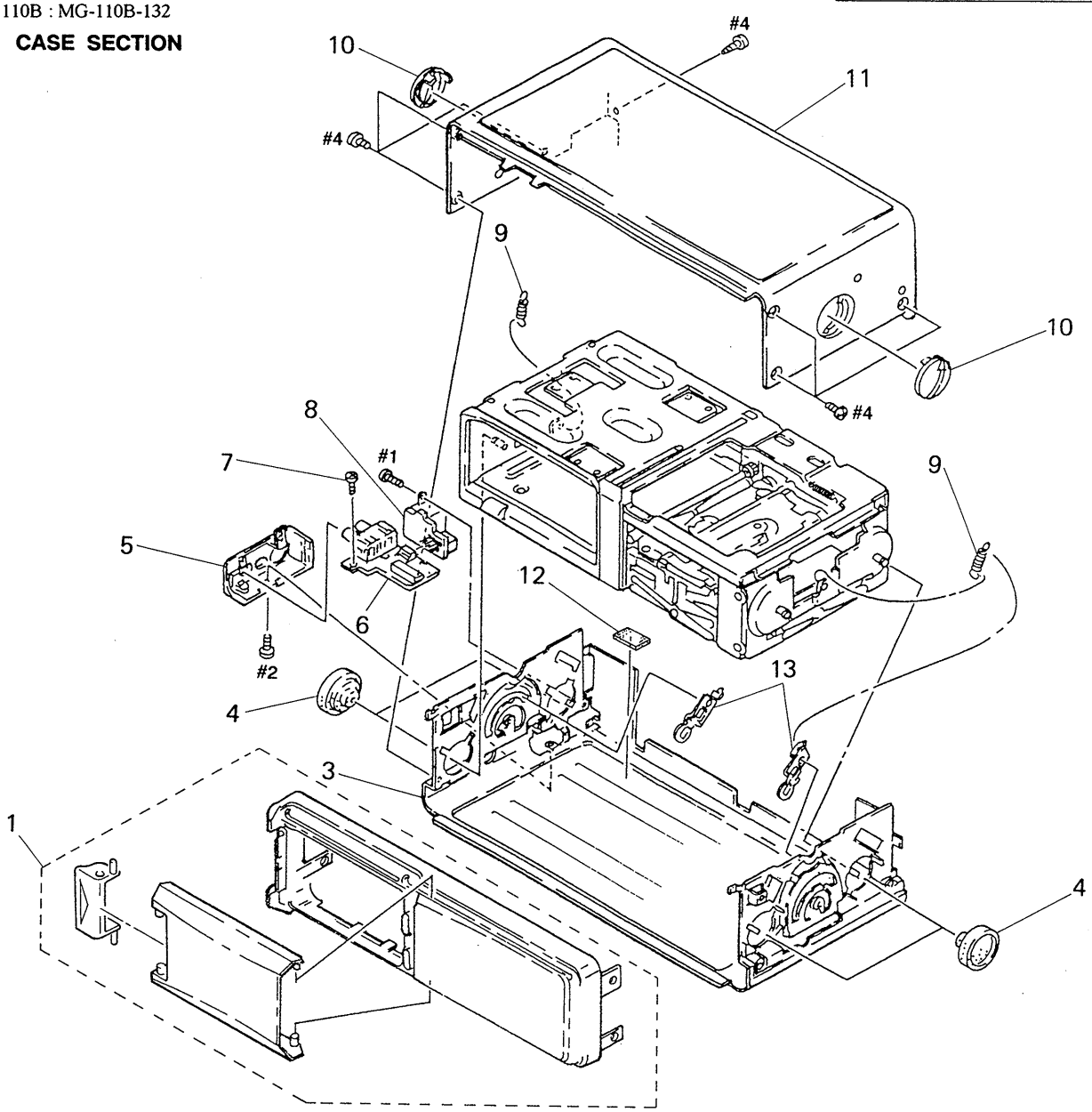
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  110A : MG-110A-132
  110B : MG-110B-132
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

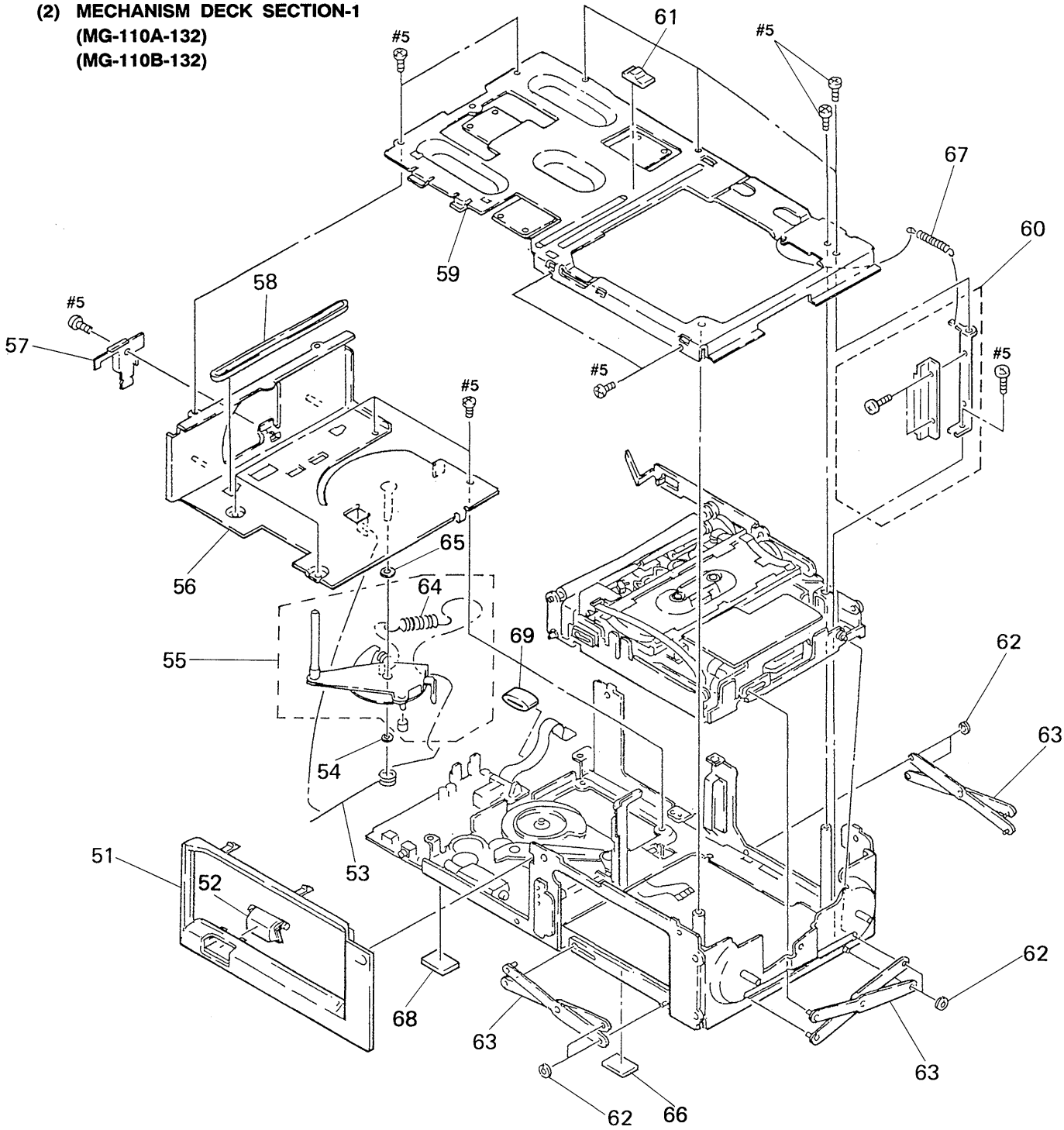
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le neméro spécifié.

(1) CASE SECTION



Ref. No.	Part No.	Description	Remark
1	X-3371-566-1	PANEL ASSY, FRONT	
* 3	3-919-139-01	CASE (LOWER)	
4	3-906-545-01	DAMPER (K)	
5	3-918-171-01	COVER (PIN)	
* 6	1-659-896-11	JACK BOARD	
7	4-908-792-31	SCREW (B2)	
* 8	1-659-897-11	BUS BOARD	
9	3-923-342-01	SPRING (FL2), TENSION	
10	3-375-504-21	LEVER (SPRING)	
* 11	3-919-138-01	CASE (UPPER)	
12	3-350-124-01	CUSHION (EJECT)	
13	X-3370-157-1	ARM (SPRING 2) ASSY	

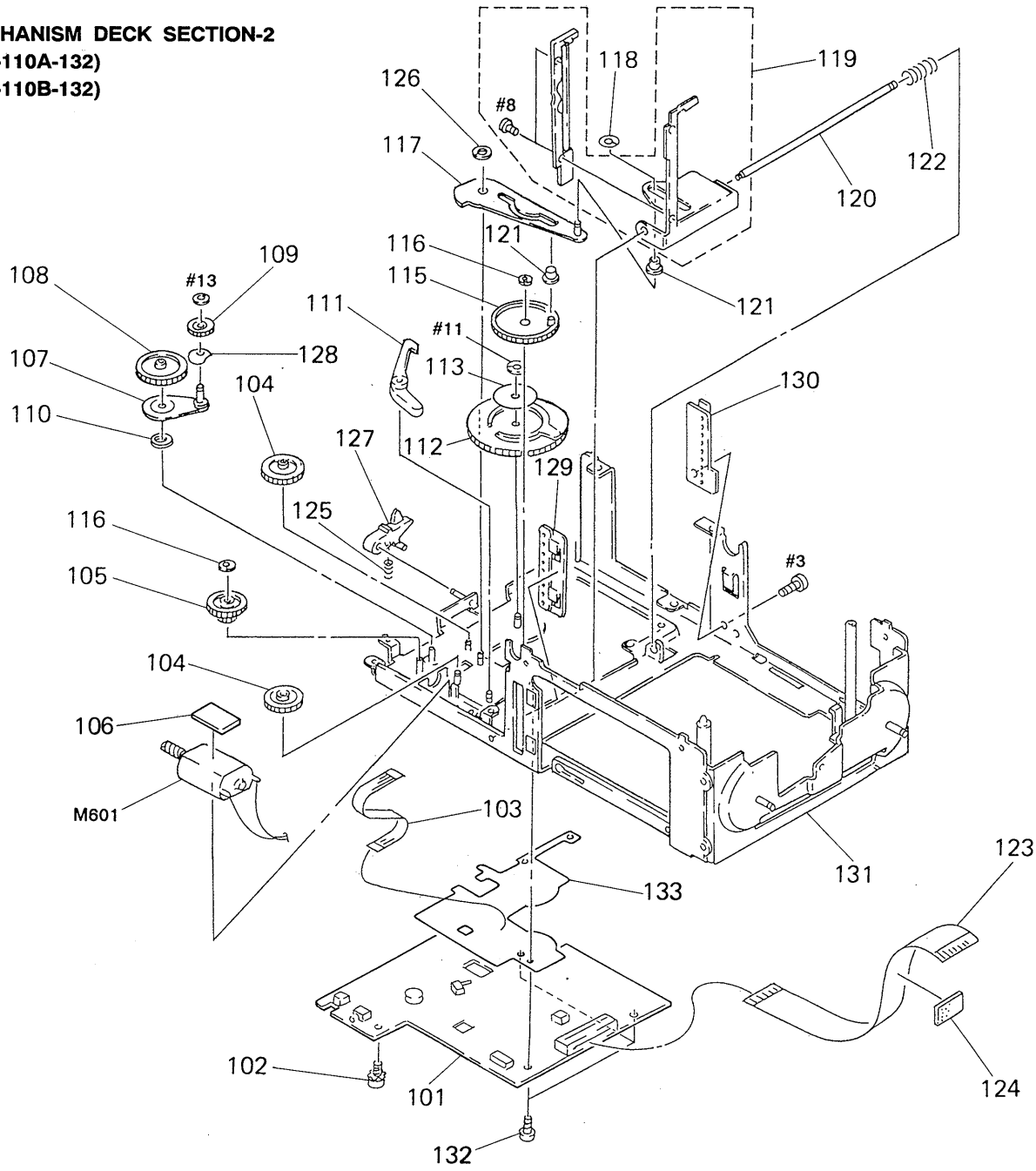
(2) MECHANISM DECK SECTION-1
(MG-110A-132)
(MG-110B-132)



Ref. No.	Part No.	Description	Remark
* 51	3-388-593-01	ESCUTCHEON (2)	
52	3-388-592-01	BUTTON (EJ2) (⏏)	
53	3-364-478-01	SPRING (EJ)	
54	3-911-104-01	WASHER	
55	X-3371-264-1	LEVER (NET) ASSY	
* 56	X-3371-263-1	CHASSIS (MZT) ASSY	
* 57	3-922-950-01	BRAKET (TR2)	
* 58	3-911-106-01	GUIDE (MZ2)	
* 59	X-3371-266-1	COVER (MDT) ASSY	
60	X-3371-617-1	RACK (110) ASSY	

Ref. No.	Part No.	Description	Remark
61	3-348-750-01	CUSHION (DAMPER)	
62	3-377-719-01	WASHER, POLYETHYLENE	
63	X-3362-348-1	LEVER (X) ASSY (110A)	
63	X-3371-384-1	LEVER (X) ASSY (110B)	
64	3-927-978-01	SPRING, TENSION	
* 65	3-360-121-21	SPACER (W)	
* 66	3-928-691-01	CUSHION (EV)	
67	3-931-995-01	SPRING (EV), TENSION	
68	3-927-065-01	CUSHION (EJECT)	
69	1-543-936-11	CORE (FPC)	

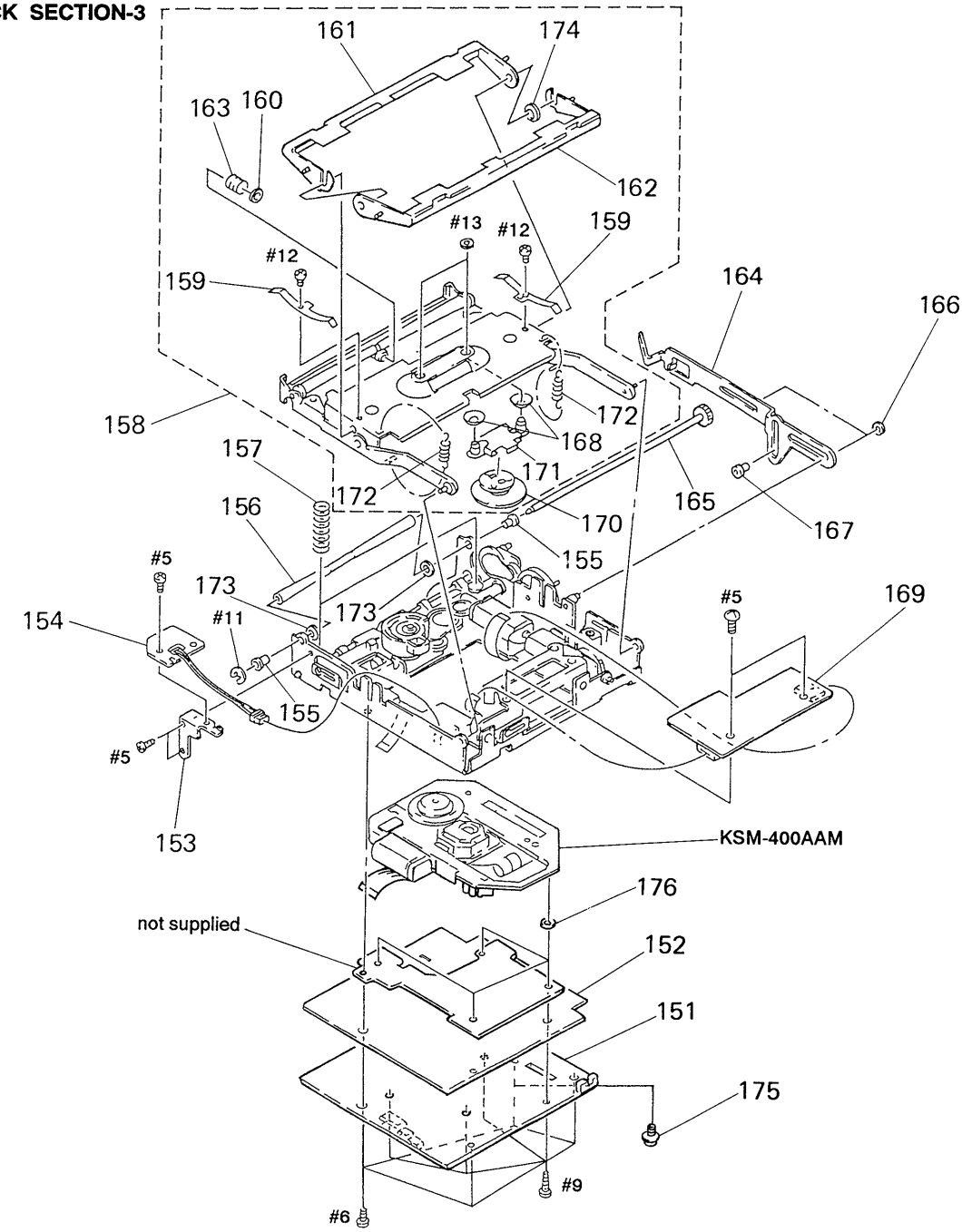
(3) MECHANISM DECK SECTION-2
(MG-110A-132)
(MG-110B-132)



Ref. No.	Part No.	Description	Remark
* 101	A-3309-049-A	MD BOARD, COMPLETE	
102	3-376-464-11	SCREW(+PTT 2.6X6), GROUND POINT	
103	1-642-838-11	JACK FLEXIBLE BOARD	
104	3-911-076-02	GEAR (MS)	
105	3-911-090-01	WHEEL (B2), WORM	
106	3-911-105-11	CUSHION (M)	
107	X-3371-253-1	LEVER (KMZT) ASSY	
108	3-911-074-02	GEAR (L2)	
109	3-912-977-01	GEAR (KS2)	
110	3-316-308-00	WASHER	
111	3-911-083-01	ARM (DR)	
112	3-912-309-01	GEAR (EJ4), CAM	
113	3-373-013-01	SPRING (EJ CAM)	
115	3-911-096-01	GEAR (DR2)	
116	3-377-719-01	WASHER, POLYETHYLENE	
117	X-3371-256-1	LEVER (DRT) ASSY	
118	3-379-490-11	WASHER, POLYETHYLENE	

Ref. No.	Part No.	Description	Remark
119	X-3371-255-1	SLIDER (DRT) ASSY	
* 120	3-911-093-01	SHAFT (SDR2)	
121	3-364-506-01	ROLLER (SL)	
122	3-568-315-01	SPRING, COMPRESSION	
123	1-655-682-11	ELEVATOR FLEXIBLE BOARD	
124	9-911-844-XX	CUSHION, BATTERY	
125	3-927-977-01	SPRING, COMPRESSION	
126	3-377-720-01	WASHER, POLYETHYLENE	
127	3-908-794-01	LEVER (T2) (MZ LOCK)	
128	3-364-387-11	SPRING (F)	
129	3-375-706-03	CATCHER (F)	
130	3-375-707-02	CATCHER (B)	
* 131	X-3371-254-1	CHASSIS (MDT) ASSY	
132	3-913-406-01	SCREW (GROUND)	
133	3-368-567-03	SHEET (MD), INSULATING	
M601	X-3370-179-1	MOTOR (P), ASSY (EJECT)	

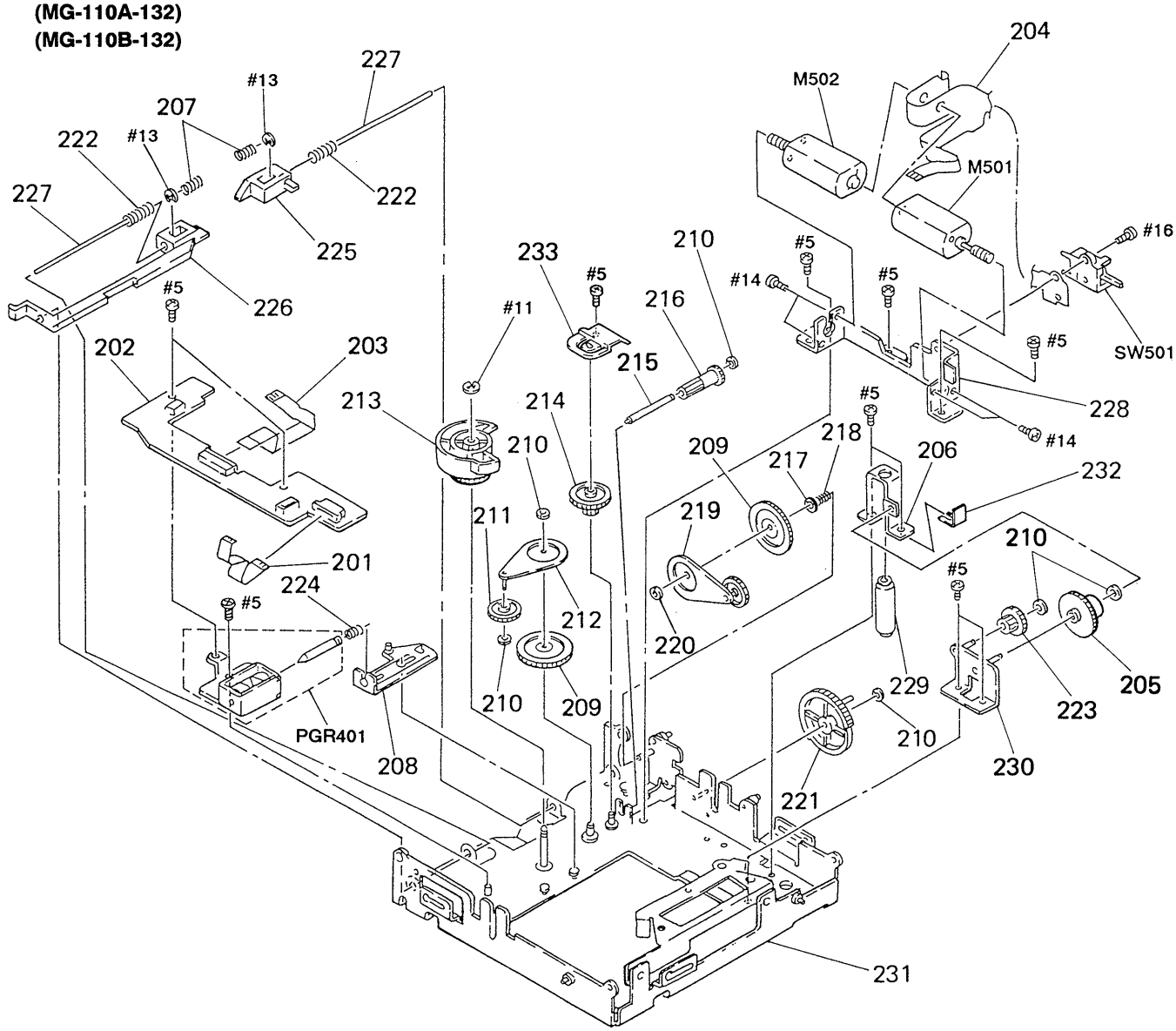
(4) MECHANISM DECK SECTION-3
(MG-110A-132)
(MG-110B-132)



Ref. No.	Part No.	Description	Remark
* 151	A-3309-487-A	SERVO BOARD, COMPLETE	
* 152	3-922-150-01	SHEET (EV), INSULATING	
* 153	3-930-565-01	BRACKET (DPTT)	
* 154	1-650-649-22	DPT BOARD (110A)	
* 154	1-659-820-11	DPT BOARD (110B)	
155	3-364-421-01	BEARING (ROLLER)	
156	3-323-231-11	ROLLER (LOWER)	
157	3-364-508-01	SPRING, COMPRESSION	
158	X-3367-989-8	ARM (NR), ASSY (110A)	
158	X-3372-148-1	ARM (KR), ASSY (110B)	
159	3-375-290-06	SPRING (DH) (110A)	
159	3-929-743-01	SPRING (DH2) (110B)	
160	3-341-752-11	WASHER, POLYETHYLENE	
161	X-3368-226-2	ARM (DH) ASSY (110A)	
161	X-3371-482-2	ARM (DHK) ASSY (110B)	
162	X-3366-788-2	ARM (DH2) ASSY (110A)	
162	X-3371-483-1	ARM (DHK2) ASSY (110B)	
163	3-364-504-11	ROLLER (RA) (110A)	
163	3-932-177-01	ROLLER (RK) (110B)	

Ref. No.	Part No.	Description	Remark
* 164	3-364-380-11	LEVER, SLIDE (110A)	
* 164	3-932-163-01	LEVER, SLIDE (110B)	
165	X-3362-345-1	GEAR ASSY, ROLLER	
166	3-377-720-01	WASHER, POLYETHYLENE	
167	3-364-506-01	ROLLER (SL)	
168	3-908-497-01	SPRING (GALVANIZED IRON)	
* 169	1-650-650-22	DRIVER BOARD (110A)	
* 169	1-659-819-11	DRIVER BOARD (110A)	
170	3-380-759-02	PLATE (C), CHUCK (110A)	
170	3-915-913-01	PLATE (CD), CHUCK (110B)	
171	X-3367-910-1	BRACKET (CP) (51) ASSY (110A)	
171	X-3371-484-1	BRACKET (CPK) ASSY (110B)	
172	3-371-504-01	SPRING, TENSION (110A)	
172	3-932-166-01	SPRING (110B)	
173	3-701-438-11	WASHER, 2.5	
174	3-380-963-11	SPACER	
175	3-913-406-01	SCREW (GROUND)	
* 176	3-350-981-21	SHEET (HOLDER)	

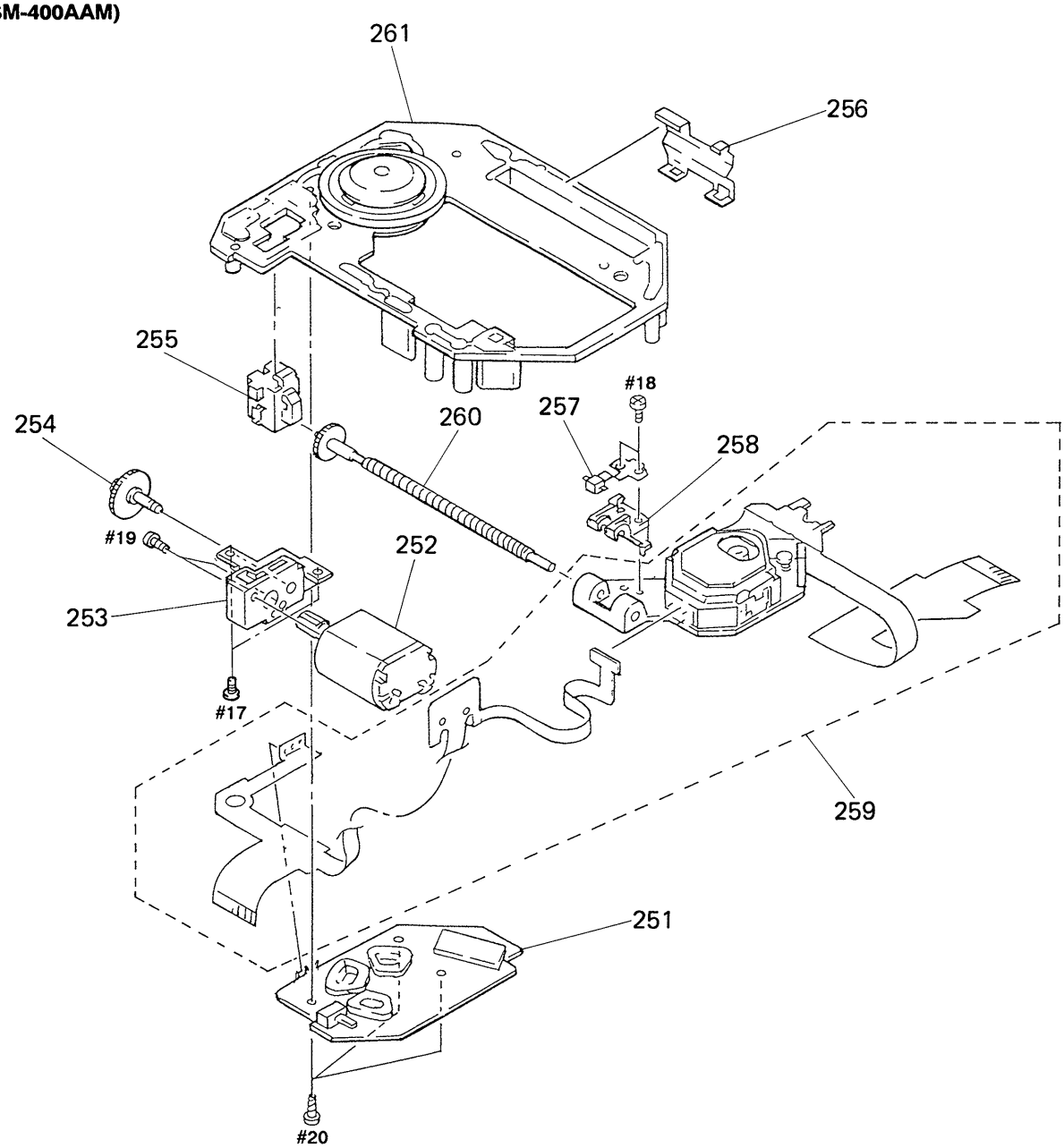
(5) MECHANISM DECK SECTION-4
(MG-110A-132)
(MG-110B-132)



Ref. No.	Part No.	Description	Remark
201	1-751-193-11	CABLE, FLEXIBLE FLAT (6 CORE)	
* 202	1-650-648-22	SENSOR BOARD (110A)	
* 202	1-659-818-11	SENSOR BOARD (110B)	
203	1-648-660-11	CABLE, FLEXIBLE FLAT (11 CORE)	
204	1-659-817-11	MOTOR FLEXIBLE BOARD	
205	3-364-424-02	GEAR (EV)	
206	3-932-549-01	BRACKET (BEARING BK)	
207	3-485-239-00	SPRING, COMPRESSION	
208	X-3371-261-1	SLIDER (KRT) ASSY	
209	3-364-417-01	GEAR (L)	
210	3-377-719-01	WASHER, POLYETHYLENE	
211	3-364-422-01	GEAR (K)	
212	X-3371-258-1	LEVER (KRAT) ASSY	
213	3-364-419-01	GEAR (R), CAM	
214	3-364-505-01	WHEEL (C), WORM	
215	3-911-088-01	SHAFT (WWR2)	
216	3-911-089-01	WHEEL (R2), WORM	
217	3-930-298-01	WASHER (TEFLON)	
218	3-388-479-01	SPRING, COMPRESSION	

Ref. No.	Part No.	Description	Remark
219	X-3371-259-1	GEAR (KWT) ASSY	
220	3-377-719-11	WASHER, POLYETHYLENE	
221	3-364-418-04	GEAR (SL)	
222	3-308-717-00	SPRING, COMPRESSION	
223	3-910-522-01	WHEEL (2), WORM	
224	3-353-804-01	SPRING, COMPRESSION	
225	3-911-102-02	LOCK (CLAW B)	
226	3-911-087-01	LOCK (CLAW)	
227	3-911-097-01	SHAFT (LOCK 2)	
228	3-930-568-01	BRACKET (EVMT)	
229	3-932-550-01	BEARING (BK)	
230	X-3371-268-1	BRACKET (EVT GEAR) ASSY	
* 231	X-3371-260-1	CHASSIS (EVT) ASSY	
232	3-336-274-11	SHIM	
233	3-930-566-01	COVER (GEAR T)	
M501	X-3367-983-1	MOTOR ASSY (ELEVATOR UP/DOWN)	
M502	X-3368-665-1	MOTOR (N) ASSY (DISC IN/OUT)	
PGR401	1-454-580-21	SOLENOID, PLUNGER	
SW501	1-571-300-31	SWITCH, ROTARY (HOME/TOP)	

(6) OPTICAL PICK-UP BLOCK (KSM-400AAM)



Ref. No.	Part No.	Description	Remark
251	8-835-456-01	MOTOR, DC SSC-02E01	
252	X-2625-210-1	GEAR ASSY, SLED MOTOR	
* 253	2-625-513-01	BASE, DRIVING	
254	2-625-507-01	GEAR (B2)	
* 255	A-4910-348-B	RETAINER ASSY, THRUST	
* 256	2-625-514-01	COVER, FLEXIBLE	

Ref. No.	Part No.	Description	Remark
257	2-625-516-01	SPRING (A), FEED	
258	2-625-515-01	RACK (AT)	
⚠259	8-848-310-11	OPTICAL PICK-UP KSS-400A	
260	X-2625-209-1	SCREW ASSY, SLED	
261	X-2625-855-1	OMD CHASSIS ASSY (F) (RP)	

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le neméro spécifié.

SECTION 7
ELECTRICAL PARTS LIST

BUS DPT DRIVER JACK

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			Remark
*	1-659-897-11	BUS BOARD			
		*********			
		< CONNECTOR >			
CN802	1-580-907-21	PLUG, CONNECTOR(CONTROL)			
* CNJ802	1-770-589-11	HOUSING, CONNECTOR(PC BOARD) 6P			
**********					
*	1-650-649-22	DPT BOARD (MG-110A-132)			
*	1-659-820-11	DPT BOARD (MG-110B-132)			
		*********			
		< DIODE >			
D451	8-719-045-93	DIODE AN1102W-1-TR (DPT)			
**********					
*	1-650-650-22	DRIVER BOARD (MG-110A-132)			
*	1-659-819-11	DRIVER BOARD (MG-110B-132)			
		**********			
		< CAPACITOR >			
C501	1-126-204-11	ELECT CHIP	47uF	20% 16V	
C502	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C503	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C504	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
		< CONNECTOR >			
CNJ501	1-764-436-21	CONNECTOR, FPC 6P			
* CNJ502	1-750-248-21	CONNECTOR, FPC 5P			
		< DIODE >			
D501	8-719-045-93	DIODE AN1102W-1-TR (DOE)			
		< IC >			
IC501	8-759-070-68	IC BA6247FP-Y			
		< CHIP CONDUCTOR >			
JR501	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR502	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR503	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR504	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR505	1-216-296-00	CONDUCTOR, CHIP		(3216)	
JR506	1-216-296-00	CONDUCTOR, CHIP		(3216)	
		< RESISTOR >			
R501	1-216-045-00	METAL CHIP	680	5% 1/10W	
R502	1-216-049-00	METAL GLAZE	1K	5% 1/10W	
R503	1-216-049-00	METAL GLAZE	1K	5% 1/10W	
R504	1-216-049-00	METAL GLAZE	1K	5% 1/10W	
**********					
*	1-659-896-11	JACK BOARD			
		**********			
		< CAPACITOR >			
C801	1-162-302-11	CERAMIC	0.0022uF	30% 16V	
		< CONNECTOR/JACK >			
CN801	1-580-441-11	JACK, PIN 2P (AUDIO OUT L/R)			
CNJ801	1-573-549-11	SOCKET, CONNECTOR 11P			
* CNP801	1-770-588-11	PIN, CONNECTOR (PC BOARD) 6P			
		< FERRITE BEAD >			
FB801	1-500-121-21	BEAD, FERRITE (CHIP)			
		< IC LINK >			
IC801	1-532-686-21	LINK, IC			
		< CHIP CONDUCTOR >			
JC801	1-216-296-00	CONDUCTOR, CHIP		(3216)	
**********					

MD

Ref. No.	Part No.	Description			Remark
*	A-3309-049-A	MD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-209-00	CERAMIC CHIP	0.0015uF	5%	50V
C102	1-163-317-11	CERAMIC CHIP	180PF	5%	50V
C103	1-128-440-11	ELECT	10uF	20%	50V
C201	1-163-209-00	CERAMIC CHIP	0.0015uF	5%	50V
C202	1-163-317-11	CERAMIC CHIP	180PF	5%	50V
C203	1-128-440-11	ELECT	10uF	20%	50V
C300	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C301	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C302	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C303	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C305	1-124-257-00	ELECT	2.2uF	20%	50V
C306	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C307	1-124-257-00	ELECT	2.2uF	20%	50V
C308	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C309	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C310	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C312	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C313	1-128-440-11	ELECT	10uF	20%	50V
C314	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V
C315	1-128-426-11	ELECT	47uF	20%	16V
C316	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C320	1-128-426-11	ELECT	47uF	20%	16V
C321	1-128-426-11	ELECT	47uF	20%	16V
C325	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C326	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C327	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C651	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C652	1-163-029-11	CERAMIC CHIP	0.0047uF		50V
C654	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C655	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C656	1-125-701-11	CAPACITOR	0.047F	0	0
C657	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C658	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C901	1-128-426-11	ELECT	47uF	20%	16V
C902	1-128-426-11	ELECT	47uF	20%	16V
C904	1-124-589-11	ELECT	47uF	20%	16V
C905	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C906	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C907	1-124-589-11	ELECT	47uF	20%	16V
C908	1-126-301-11	ELECT	1uF	20%	50V
C909	1-124-589-11	ELECT	47uF	20%	16V
C910	1-124-589-11	ELECT	47uF	20%	16V
C911	1-126-942-61	ELECT	1000uF	20%	16V
C912	1-128-426-11	ELECT	47uF	20%	16V
C920	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C922	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C923	1-163-038-00	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CNJ901	1-766-317-11	CONNECTOR, FFC/FPC (ZIF) 30P			
CNJ902	1-573-549-11	SOCKET, CONNECTOR 11P			
* CNP651	1-506-998-11	PIN, CONNECTOR (PC BOARD) 2P			
		< DIODE >			
D301	8-719-801-78	DIODE	1SS184		
D651	8-719-975-40	DIODE	RB411D		
D652	8-719-106-08	DIODE	RD6.2M-B2		
D653	8-719-106-08	DIODE	RD6.2M-B2		
D654	8-719-975-40	DIODE	RB411D		
D655	8-719-975-40	DIODE	RB411D		
D901	8-719-210-33	DIODE	EC10DS2		
D902	8-719-210-33	DIODE	EC10DS2		
D903	8-719-801-78	DIODE	1SS184		
D904	8-719-106-08	DIODE	RD6.2M-B2		
D905	8-719-105-99	DIODE	RD6.2M-B1		
D906	8-719-038-48	DIODE	1SS319(TE85R)		
D907	8-719-801-78	DIODE	1SS184		
		< FERRITE BEAD >			
FB301	1-500-121-21	BEAD, FERRITE (CHIP)			
FB302	1-414-235-11	INDUCTOR, FERRITE BEAD			
FB303	1-414-235-11	INDUCTOR, FERRITE BEAD			
FB304	1-500-121-21	BEAD, FERRITE (CHIP)			
FB305	1-500-244-21	BEAD, FERRITE (CHIP)			
FB306	1-500-244-21	BEAD, FERRITE (CHIP)			
FB307	1-500-244-21	BEAD, FERRITE (CHIP)			
		< IC >			
IC301	8-759-185-27	IC	PCM1710U-A		
IC302	8-759-064-92	IC	NJM5532M-D		
IC305	8-759-284-66	IC	TA78M08F(TE16L)		
IC652	8-759-040-83	IC	BA6287F		
IC653	8-759-097-36	IC	RH5VA40AA		
IC654	8-759-284-87	IC	MM1284XFFE		
IC901	8-759-231-53	IC	TA7805S		
IC902	8-759-054-12	IC	PQ09RA1		
		< CHIP CONDUCTOR >			
JC302	1-216-296-00	CONDUCTOR, CHIP			(3216)

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q302	8-729-027-52	TRANSISTOR DTC124EKA-T146			
Q901	8-729-016-83	TRANSISTOR 2SB1446			
Q902	8-729-027-52	TRANSISTOR DTC124EKA-T146			
Q903	8-729-822-05	TRANSISTOR 2SD1622-ST-TD			
Q904	8-729-027-31	TRANSISTOR DTA124EKA-T146			
Q905	8-729-230-49	TRANSISTOR 2SC2712-YG			
		< RESISTOR >			
R101	1-216-210-00	METAL GLAZE	3.3K	2%	1/8W
R102	1-216-219-00	METAL GLAZE	7.5K	2%	1/8W
R103	1-216-211-00	METAL GLAZE	3.6K	2%	1/8W
R104	1-216-174-00	METAL GLAZE	100	2%	1/8W
R105	1-216-238-00	METAL GLAZE	47K	2%	1/8W
R201	1-216-210-00	METAL GLAZE	3.3K	2%	1/8W
R202	1-216-219-00	METAL GLAZE	7.5K	2%	1/8W
R203	1-216-211-00	METAL GLAZE	3.6K	2%	1/8W
R204	1-216-174-00	METAL GLAZE	100	2%	1/8W
R205	1-216-238-00	METAL GLAZE	47K	2%	1/8W
R301	1-216-035-00	METAL CHIP	270	5%	1/10W
R302	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R313	1-216-222-00	METAL GLAZE	10K	2%	1/8W
R314	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R661	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R668	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R669	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R670	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R901	1-216-073-00	METAL CHIP	10K	5%	1/10W
R902	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R903	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R904	1-216-077-00	METAL CHIP	15K	5%	1/10W
R905	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R907	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R908	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R910	1-218-279-11	METAL GLAZE	12	5%	1/2W
R911	1-218-279-11	METAL GLAZE	12	5%	1/2W
R912	1-218-279-11	METAL GLAZE	12	5%	1/2W
		< RELAY >			
RY301	1-755-081-11	RELAY			
		< SWITCH >			
SW651	1-571-532-21	SWITCH, TACTIL (⏏)			
SW653	1-692-864-21	SWITCH, PUSH (1 KEY) (LOCK)			
SW654	1-571-958-11	SWITCH, PUSH (1 KEY) (PST)			
SW655	1-571-958-11	SWITCH, PUSH (1 KEY) (LOT)			

Ref. No.	Part No.	Description			Remark
		< VIBRATOR >			
X301	1-567-908-11	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
*	1-650-648-22	SENSOR BOARD (MG-110A-132)			
*	1-659-818-11	SENSOR BOARD (MG-110B-132)			
		**********			
		< CONNECTOR >			
CNJ401	1-764-437-21	CONNECTOR, FPC 11P			
CNJ402	1-764-436-21	CONNECTOR, FPC 6P			
CNP401	1-580-055-21	PIN, CONNECTOR 2P			
* CNP402	1-695-320-21	PIN, CONNECTOR (1.5MM) (SMD) 2P			
		< DIODE >			
D401	8-719-801-78	DIODE 1SS184			
		< CHIP CONDUCTOR >			
JR401	1-216-296-00	CONDUCTOR, CHIP			(3216)
JR402	1-216-296-00	CONDUCTOR, CHIP			(3216)
JR403	1-216-296-00	CONDUCTOR, CHIP			(3216)
JR404	1-216-296-00	CONDUCTOR, CHIP			(3216)
		< TRANSISTOR >			
Q401	8-729-804-41	TRANSISTOR 2SB1122-S			
Q402	8-729-027-52	TRANSISTOR DTC124EKA-T146			
Q403	8-729-024-26	PHOTO TRANSISTOR CPT-181S-C-TU (DPT)			
Q404	8-729-024-26	PHOTO TRANSISTOR CPT-181S-C-TU (DOE)			
		< RESISTOR >			
R401	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R402	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R403	1-216-194-00	METAL CHIP	680	5%	1/8W
		< SWITCH >			
SW401	1-571-754-31	SWITCH, PUSH (1 KEY) (CES)			
**********					
*	A-3309-487-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C20	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C22	1-135-227-11	TANTAL. CHIP	100uF	20%	6.3V
C23	1-135-227-11	TANTAL. CHIP	100uF	20%	6.3V
C24	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C25	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C27	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C28	1-163-005-11	CERAMIC CHIP	470PF	10%	50V

SERVO

Ref. No.	Part No.	Description			Remark
C29	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C31	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C32	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C37	1-110-454-11	SOLID CHIP	10uF	20%	16V
C38	1-110-454-11	SOLID CHIP	10uF	20%	16V
C39	1-110-454-11	SOLID CHIP	10uF	20%	16V
C40	1-110-454-11	SOLID CHIP	10uF	20%	16V
C41	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
C50	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C51	1-163-087-00	CERAMIC CHIP	4PF		50V
C52	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C701	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C702	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C703	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C704	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C705	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C706	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C707	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C708	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C709	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C713	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C714	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C719	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C740	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C751	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C753	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C754	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C770	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C771	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C772	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C773	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C774	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C775	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C776	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C777	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C778	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C779	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C780	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C781	1-163-038-00	CERAMIC CHIP	0.1uF		25V

< CONNECTOR >

CNJ1	1-766-767-21	CONNECTOR, FPC 12P
CNJ2	1-770-352-11	CONNECTOR, FPC 30P
CNJ3	1-764-439-21	CONNECTOR, FPC 11P
CNJ4	1-766-767-21	CONNECTOR, FPC 12P

< DIODE >

D701	8-719-801-78	DIODE	1SS184

< FERRITE BEAD >

FB702	1-414-234-11	INDUCTOR, FERRITE BEAD
FB703	1-414-234-11	INDUCTOR, FERRITE BEAD
FB704	1-414-234-11	INDUCTOR, FERRITE BEAD

< IC >

IC11	8-752-061-08	IC	CXA1571N-T4
IC21	8-752-361-94	IC	CXD2515Q
IC31	8-752-871-74	IC	CXP84332-020Q
IC32	8-759-363-60	IC	NM24C16EM8X
IC41	8-752-373-27	IC	CXD2512AQ
IC42	8-759-295-34	IC	M5M44400BTP-7
IC703	8-759-071-79	IC	BA6297AFP
IC704	8-759-981-69	IC	LM2904M

< PHOTO INTERRUPTER >

PH11	8-749-925-02	PHOTO INTERRUPTER SG-223

< JUMPER RESISTOR >

JC701	1-216-864-11	METAL CHIP	0	5%	1/16W
JC702	1-216-864-11	METAL CHIP	0	5%	1/16W
JC703	1-216-864-11	METAL CHIP	0	5%	1/16W

< TRANSISTOR >

Q11	8-729-141-48	TRANSISTOR	2SB624-BV345
Q12	8-729-027-52	TRANSISTOR	DTC124EKA-T146
Q13	8-729-807-34	TRANSISTOR	2SB1123-S
Q14	8-729-027-52	TRANSISTOR	DTC124EKA-T146
Q701	8-729-027-31	TRANSISTOR	DTA124EKA-T146
Q702	8-729-027-52	TRANSISTOR	DTC124EKA-T146
Q703	8-729-027-31	TRANSISTOR	DTA124EKA-T146
Q704	8-729-027-31	TRANSISTOR	DTA124EKA-T146
Q705	8-729-027-31	TRANSISTOR	DTA124EKA-T146
Q711	8-729-820-68	TRANSISTOR	2SD1802FA-S

< RESISTOR >

R11	1-216-093-00	METAL CHIP	68K	5%	1/10W
R12	1-216-093-00	METAL CHIP	68K	5%	1/10W
R13	1-216-093-00	METAL CHIP	68K	5%	1/10W
R14	1-216-093-00	METAL CHIP	68K	5%	1/10W
R15	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R16	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R17	1-216-024-00	METAL GLAZE	91	5%	1/10W
R20	1-216-158-00	METAL GLAZE	22	5%	1/8W
R22	1-216-075-00	METAL CHIP	12K	5%	1/10W
R23	1-216-075-00	METAL CHIP	12K	5%	1/10W
R25	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref.No.	Part No.	Description			Remark
R26	1-216-073-00	METAL CHIP	10K	5%	1/10W
R35	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R36	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R50	1-216-835-11	METAL CHIP	15K	5%	1/16W
R51	1-216-835-11	METAL CHIP	15K	5%	1/16W
R52	1-216-837-11	METAL CHIP	22K	5%	1/16W
R53	1-216-814-11	METAL CHIP	270	5%	1/16W
R57	1-216-073-00	METAL CHIP	10K	5%	1/10W
R59	1-216-073-00	METAL CHIP	10K	5%	1/10W
R60	1-216-047-00	METAL GLAZE	820	5%	1/10W
R61	1-216-047-00	METAL GLAZE	820	5%	1/10W
R700	1-216-845-11	METAL CHIP	100K	5%	1/16W
R702	1-216-037-00	METAL CHIP	330	5%	1/10W
R703	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R704	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R705	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R706	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R707	1-216-833-11	METAL CHIP	10K	5%	1/16W
R708	1-216-845-11	METAL CHIP	100K	5%	1/16W
R709	1-216-857-11	METAL CHIP	1M	5%	1/16W
R710	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R711	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R712	1-216-833-11	METAL CHIP	10K	5%	1/16W
R713	1-216-085-00	METAL CHIP	33K	5%	1/10W
R714	1-216-833-11	METAL CHIP	10K	5%	1/16W
R724	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R725	1-216-837-11	METAL CHIP	22K	5%	1/16W
R726	1-216-837-11	METAL CHIP	22K	5%	1/16W
R727	1-216-837-11	METAL CHIP	22K	5%	1/16W
R728	1-216-837-11	METAL CHIP	22K	5%	1/16W
R729	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R730	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R731	1-216-081-00	METAL CHIP	22K	5%	1/10W
R732	1-216-081-00	METAL CHIP	22K	5%	1/10W
R733	1-216-073-00	METAL CHIP	10K	5%	1/10W
R734	1-216-041-00	METAL CHIP	470	5%	1/10W
R735	1-216-837-11	METAL CHIP	22K	5%	1/16W
R739	1-216-841-11	METAL CHIP	47K	5%	1/16W
R740	1-216-841-11	METAL CHIP	47K	5%	1/16W
R741	1-216-841-11	METAL CHIP	47K	5%	1/16W
R750	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R751	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R763	1-216-841-11	METAL CHIP	47K	5%	1/16W
R764	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R765	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R770	1-216-837-11	METAL CHIP	22K	5%	1/16W
R771	1-216-837-11	METAL CHIP	22K	5%	1/16W
R772	1-216-837-11	METAL CHIP	22K	5%	1/16W
R773	1-216-068-00	METAL CHIP	6.2K	5%	1/10W
R774	1-216-083-00	METAL CHIP	27K	5%	1/10W
R776	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R777	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R778	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R779	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R780	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R781	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R782	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R783	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R784	1-218-344-11	METAL GLAZE	7.5K	5%	1/16W
R785	1-216-833-11	METAL CHIP	10K	5%	1/16W
R786	1-216-833-11	METAL CHIP	10K	5%	1/16W
R787	1-216-833-11	METAL CHIP	10K	5%	1/16W
R788	1-216-833-11	METAL CHIP	10K	5%	1/16W
R789	1-216-841-11	METAL CHIP	47K	5%	1/16W

< VARIABLE RESISTOR >

RV11	1-238-091-11	RES, ADJ, CERMET	22K
RV12	1-238-091-11	RES, ADJ, CERMET	22K

< THERMISTOR >

TH701	1-810-510-21	THERMISTOR NTH5G35A472K01TE

< VIBRATOR >

X701	1-760-479-11	VIBRATOR, CERAMIC (8MHz)

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MISCELLANEOUS

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69	1-543-936-11	CORE (FPC)
103	1-642-838-11	JACK FLEXIBLE BOARD
123	1-655-682-11	ELEVATOR FLEXIBLE BOARD
201	1-751-193-11	CABLE, FLEXIBLE FLAT (6 CORE)
203	1-648-660-11	CABLE, FLEXIBLE FLAT (11 CORE)
204	1-659-817-11	MOTOR FLEXIBLE BOARD
251	8-835-456-01	MOTOR, DC SSC-02E01S
252	X-2625-210-1	GEAR ASSY, SLED MOTOR
⚠259	8-848-310-11	OPTICAL PICK-UP KSS-400A
M501	X-3367-983-1	MOTOR ASSY (ELEVATOR UP/DOWN)
M502	X-3368-665-1	MOTOR (N) ASSY (DISC IN/OUT)
M601	X-3370-179-1	MOTOR (P), ASSY (EJECT)
PGR401	1-454-580-21	SOLENOID, PLUNGER
SW501	1-571-300-31	SWITCH, ROTARY (HOME/TOP)

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The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark

****
HARDWER LIST
****

#1	7-621-255-35	SCREW +BVTT 2X5 (S)	
#2	7-621-255-40	SCREW +BVTT 2X6 (S)	
#3	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
#4	7-621-773-95	SCREW +PTT 2.6X6 (S)	
#5	7-685-781-09	SCREW +PTT 2X4 (S)	
#6	7-685-782-01	SCREW +PTT 2X5 (S)	
#8	7-627-554-07	SCREW, PRECISION +P 2X2.2	
#9	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
#11	7-624-104-04	STOPRING 2.0, TEPE-E	
#12	7-627-554-37	SCREW, PRECISION +P 2X1.8 TYPE 1	
#13	7-624-102-04	STOP RING 1.5, TYPE-E	
#14	7-627-553-27	SCREW, PRECISION +P 2X2.5	
#16	7-621-259-25	SCREW +P 2.6X4	
#17	7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3	
#18	7-627-852-17	+P 1.7X4	
#19	7-628-253-15	SCREW +PS 2X5	
#20	7-685-102-19	SCREW +P 2X4 TYPE 2 NON-SLIT	

****

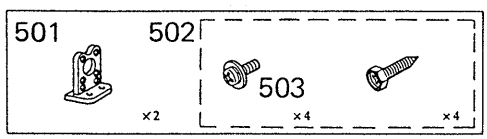
ACCESSORIES & PACKING MATERIALS
****

	1-590-519-21	CORD (WITH CONNECTOR) (BUS CABLE)
	1-690-743-11	CORD, CONNECTION (RCA PIN CORD)
	3-759-756-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN, DUTCH) (AEP, UK, German)
	3-759-756-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (US, Canadian, E)
	3-759-756-41	MANUAL, INSTRUCTION (SPANISH, SWEDISH, PORTUGUESE, DANISH, FINNISH) (AEP, UK)
	4-875-574-00	SHEET, PROTECTION
	X-3368-306-2	MAGAZINE (450) ASSY

****

****
MAUNTIG HARDWARE
****

* 501	3-375-508-11	BRACKET (300)	
* 502	X-3369-824-1	SCREW ASSY	
503	7-682-662-09	SCREW +PSW 4X10	



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CDX-81

SONY

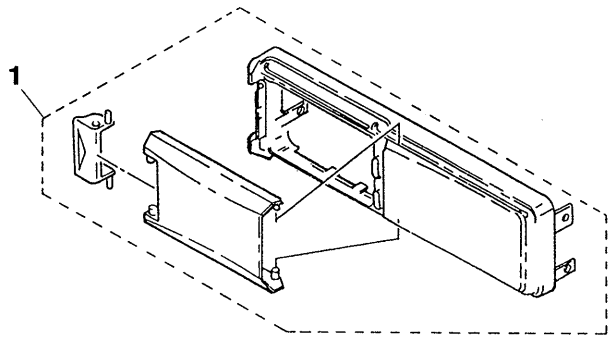
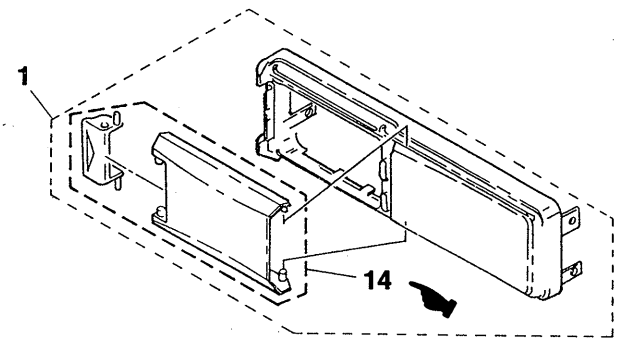
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model

CORRECTION-1

Correct your service manual as shown below.

☛ : **Indicates corrected portion.**

Page	INCORRECT	CORRECT
29		
	Ref. No. Part No. Description	Ref. No. Part No. Description 14 X-3372-390-1 DOOR ASSY ☛

(SPM-97006)

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